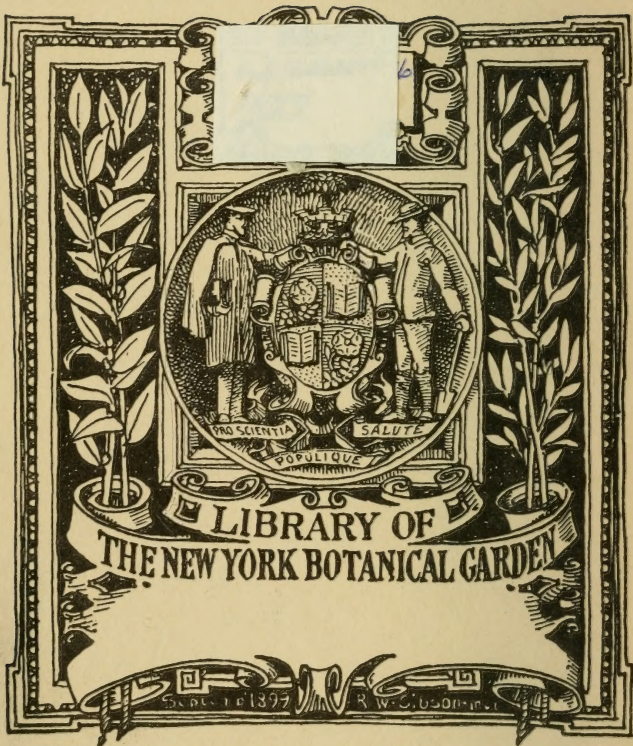




SOUTHERN \* \*  
FLORICULTURE

JAMES MORTON



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# SOUTHERN FLORICULTURE,

A GUIDE TO THE SUCCESSFUL CULTIVATION OF

FLOWERING <sup>AND</sup> ORNAMENTAL PLANTS

IN THE CLIMATE OF THE

SOUTHERN STATES.

—BY—

JAMES MORTON,  
Manager Evergreen Lodge Flower Garden,  
Clarksville, Tennessee.

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## PREFACE.

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A RAPIDLY growing demand for information on the subject of Floriculture from correspondents in widely separated parts of the South; a knowledge that no work exists on plant culture that affords the amateur intelligent information of how to get the best results from flowering and ornamental plants in our peculiar climate, together with a great desire to more fully extend the love of Floriculture in a climate congenial to so fascinating a pursuit, formed a combination of circumstances that induced the publication of the present volume.

It is said that "gardening is an employment for which no man is too high or too low;" this aphorism no doubt applies most directly to the operations in the flower garden, and the development of the beautiful in nature. Every flower garden in the country is a beautiful expression of civilization, intelligence and culture, and fosters the refinement of its people, therefore the advancement of a vocation at once so

beautiful and useful is what has been endeavored to attain by this work. If among the many disadvantages of the rigorous climate of the North, or beneath the smoky skies of England, Floriculture is so extensively practiced and enjoyed, how much more ought we to enjoy it with our wealth of sunshine, our genial climate, and generous soil?

The development of our mineral wealth, the progress of manufactures, the ever increasing yield of our agriculture, are strides in the onward march of our material prosperity that manifest itself in our schools, our authors, our public press, and the increasing fondness for the beautiful in art, as well as the development of the beautiful in nature. All are triumphs in our advancement that it is the purpose of the author to keep pace with in the art of Floriculture.

Floriculture without wealth is but the vision of a dream, and as our wealth has grown so has Floriculture extended everywhere throughout our land. The Floriculture of the present is not like the Floriculture of the past. New plants have been introduced, and consequently many new systems have been adopted. More interest in flowers is at present manifested than ever before in the history of the South. For instance the great interest manifested in Chrysanthemums at the present day, now denominated a craze, is unrivalled in the annals of



Floriculture in the Southern States, and form the coming events that cast their shadows before the future may be seen still more bright and flowery, so that we may be thankful that we have the good fortune to live in this age, independently of the consideration that it is better to be still alive than only to have lived.

To properly appreciate the vegetable products of the earth, we must picture to ourselves what would be the appearance of the face of nature without them. It is true we would have the earth's surface portioned off into hill and valley, and intersected by rivers and streams, but everything would be bare, rugged and unseemly, and a picture of desolate barrenness would appear. Since then a bountiful Providence has spared us from such a picture, and so lavishly bestrewed the earth with flowers and plants from which we may gather delight in beholding their ever varying, significant and suggestive moods, it is but fitting that we should apply our knowledge to assist nature in the development of all that is beautiful. It may be said that art cannot mend nature, but then "The art itself is nature." Every portion of the earth has its peculiar flora, each particular plant being adapted to the peculiar circumstances and conditions in which they are found. Thus we have the everglades or marsh, the mountain and valley, each with its particular vegetation.

The peat, the loam, the chalk, the gravel and clay soils have each their own peculiar plants. As we ascend the mountains the temperature gradually becomes lower, and vegetation decreases in stature until the regions of perpetual snow is reached, where no vegetation exists. In all civilized countries where plants not indigenous to the climate are cultivated, the study of their natural habitation is of all importance in their successful cultivation. For instance the plants from a peat soil will not flourish in a clay, or the plants from a clay soil flourish in gravel, no more than the plants from the swamps will exist on the mountain tops. The safest guide to the successful culture of all plants is to imitate as near as possible the natural conditions in which they are found in their native habitation, and where it is practicable to approximate as nearly as possible these natural conditions good results will most surely ensue. Therefore in view of this the author has endeavored to give in this treatise on Floriculture the proper soil and other important points suitable to the different plants upon which it treats. In England, it is true, they have the Violet and Primrose in wild and promiscuous confusion, as we have the Magnolia, the Palmetto and Jassamine. In both countries these practically take care of themselves. It is therefore only necessary where we reach beyond the limits of our indigenous plants that a book of

this kind is required. It is an acknowledged fact that there are more flowers cultivated in the Southern States than in any other portion of the country in proportion to our population. Northern florists have long since grown rich from Southern flower buyers, and where such a wealth of plants, exotic in origin and peculiar in habit, are found, the author is assured the perusal of this volume must prove both interesting and instructive. While this is not intended for the professional florist, as most of the simple instructions given are all well known to him, the writer is confident that its pages may be read with interest by the most practical.

To go more fully into the culture of every known plant cultivated in the South would entail a volume many times larger than this, hence the omission of many plants not considered important, so as to be able to treat more fully the species most popular and most generally grown.

What gift is more charming than flowers? A queen may give them to a peasant, or a peasant to a king. They transmit most fittingly the esteem entertained for individuals, for corporations, or nations. Nowhere can emblems be found that imparts so happily the tender sentiment of a loyal heart for his lady love. They know no country or season, their message is the same in both hemispheres, and their mute sentences are as freely inter-

pretated in December as in May. No other symbol can be given or received with better grace, being devoid of all the imputations that gifts more enduring than flowers might convey. Therefore I now present to the flower loving ladies of the South this edition of "Southern Floriculture," and while it may not be as fragrant as the Magnolia or Rose, it is hoped that alike in the seasons—when June's Red Roses delight us, or "rain and wind beat dark December"—that this little volume will prove to its readers a perennial bouquet. JAMES MORTON.

*Evergreen Lodge Flower Garden, Clarksville, Tenn.*

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## CHAPTER I.

# THE ROSE.

### ROSE LORE.

"The Rose is the sign of joy and love,  
Young blushing love in its early dawn."—PERCIVAL.



THE ROSE was known in early times and was as great a favorite among the nations of antiquity as it is with the people or the present age. It stands pre-eminently at the head of all the productions of the floral world, and is fittingly called "Queen of Flowers." It is the most widely known of all the bright gems that array the abode of civilized man, finding as it does, a home in the remotest corners of the earth, and cherished from the humblest cottage to the precincts of the palace. The name of the Rose is derived from a Latin word signifying "red," the prevailing color. There are many varieties of the Rose. Some French and English catalogues publish lists of from three to five hundred different sorts, and new varieties are raised every year in all countries where their culture is practiced. In ancient Rome and Greece the Rose was employed for medicinal purposes, also as an article of beauty at the banqueting table, and was

strewn over the floors of the rooms in which the feast was held. It is related that Nero spent fifty thousand dollars in the purchase of Roses for one supper, on which occasion the floor of the apartment was covered to the depth of one foot and a half. It is also related that mattresses were made of Roses for men of rank to recline upon, and that Gallienus, the Roman emperor, had such a bed. Here, perhaps, we have the origin of the old saying that a person born to a life of luxury has fallen into a "bed of Roses." The Rose was in Grecian lore the Flower of Venus, which Cupid consecrated to Harpocrates, the God of Silence. Therefore, the Rose is the emblem of secrecy, and hence the old saying, "under the Rose," implying, keep secret. In rooms for convivial meetings it was once customary to place a Rose above the table, signifying that everything spoken there ought not to be divulged. In the Eastern countries the petals of the Rose are converted into beads by being pounded in an iron mortar, which gives the paste a black color. It is then moulded or rolled into spherical form and polished; after being perfumed, they are perforated with a red hot wire. The rosary of beads used by Roman Catholics in their devotion was formerly made in this manner. Roses have also on several occasions been consecrated by various Popes, and sent as presents to such monarchs as evoked their special favor. This ceremony dates back as far as A. D. 1049, and gave rise to the order of the Golden Rose. Edward I., King of England, was not only a crusader, but so aided the Popes in the Sicilian wars that a Golden Rose was presented to him, and he was the first English king that adopted the Rose as a national badge. Since then and up to the present day the Rose has been the national flower of England. Rose water was known to the Greeks in the time of Homer, and to Avicenna among

the Arabs, A. D. 980. When Saladin took Jerusalem in 1128 he would not enter the shrine of the temple, then converted into a church by the Christians, until the walls had been thoroughly washed and purified by Rose water. At the taking of Constantinople by Mahomet II. in 1453, the Church of Sophia was washed with Rose water in a similar manner before being converted into a Mosque. In Father Catron's history of the Mogul Empire we read that the celebrated Princess Nourmahal filled an entire canal with Rose water, upon which she was in the habit of sailing with the Great Mogul. Many are the poetical and legendary allusions of the Rose in every country in which it is known. In the Eastern country the flower has always been the favorite of the poets, and numerous are the notices of it to be found in their works. In our own literature the Rose has been the poet's frequent theme. Byron, in his "Bride of Abydos," tells of a miraculous ever-blooming Rose that sprang from the virgin grove of Zuleike :

One spot exists, which, ever blooms,  
Even in that deadly grove—  
A single Rose is shedding there  
Its lonely lustre; meek and pale  
It looks, as planted by Despair.  
So white, so faint—the slightest gale  
Might whirl the leaves on high;  
And yet though storms and blight assail,  
And hands more rude than Wintry sky  
May wring it from the stem—in vain,  
To-morrow sees it bloom again.

Various and beautiful are the legends that account for the many colors of the Rose. There is a tradition that on the ejection of Eve from Paradise the Roses, which were previously all white, blushed red at the shame of our first mother's fall. The origin of the blush imparted



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Luciole.



to the Rose is in a different manner most beautifully described by the poet Carey :

When erst in Eden's blissful bowers,  
 Young Eve surveyed her countless flowers,  
 An opening Rose of purest white  
 She marked with eye that beamed delight.  
 Its leaves she kissed, and straight it drew  
 From beauty's lips the vermeil's hue.

Herrick, in his "Hesperides," gives us still another version of how Roses became red :

Roses at first were white,  
 'Till they could not agree,  
 Whether my Sappho's breast,  
 Or they more white should be.

But being vanquished quite,  
 A blush their cheeks bespread,  
 Since which, believe the rest,  
 The Roses first came red.

The Rose is emblematic of voluptuous love, and the creative imagination of the poet thus pleasingly accounts for its first being clad in a mossy garment :

The angel of the flowers one day  
 Beneath a Rose-tree sleeping lay,  
 That spirit—to whose care is given  
 To bathe young buds in dews from heaven.  
 Awaking from his light repose,  
 The angel whispered to the Rose :  
 "Oh, fondest object of my care,  
 Still fairest found where all are fair,  
 For the sweet shade thou'st given me,  
 Ask what thou wilt; 'tis granted thee."  
 "Then," said the Rose with deepening glow,  
 "On me another grace bestow."  
 The spirit paused in silent thought;  
 What grace was there that flower had not?  
 'Twas but a moment, o'er the Rose  
 A veil of moss the angel throws;  
 And robed in nature's simplest weed,  
 Could there a flower that Rose exceed?

The oldest Rose bush in the world is believed to be that which is trained on the Cathedral of Hildershein in Germany. The roots are buried in the crypt below the choir. The stem is a foot thick, and half a dozen branches cover the eastern side of the building, and bear countless flowers in Summer. Its age is unknown, but documents exist that show that nearly a thousand years ago a bishop had it protected by a stone roof that still remains. There are many superstitions concerning the Rose, and old customs and remarkable circumstances in which it has a part. In some Welsh churchyards it is still customary to make an enclosure of Roses around the grave of a young maiden. In Glamorganshire a white Rose is always planted on a virgin's tomb. The red Rose is appropriate to the grave of any person distinguished for goodness, especially for benevolence of character. At Eyam, in Derbyshire, England, and most other villages and little towns in the "Peak," the ancient custom of hanging a garland of white Roses and a pair of white gloves over the pews of the unmarried villagers, who die in the flower of their age, prevails to this day.

The gloves suspended by the garland's side,  
 White as its snowy flowers, with ribands tied.  
 Dear village, long these wreaths funereal spread,  
 Simple memorial of the early dead.

The Rosebud also has been used as a means of divination by the maidens of olden England, as to who would be their future husbands. Herriek, in his "Hesperides," speaking of a bride, says :

She must no more a-maying ;  
 Or by the Rosebubs divine  
 Who'll be her Valentine.

In Lancashire and Cheshire it is considered unlucky to find a Dog Rose ; if you do, you will quarrel with the

person who receives it, however dear to you; or if you form a design near it, it will come to naught. Grose tells us in the following lines of the custom of gathering the Rose on midsummer eve—observed from time immemorial amongst our rural population :

The Moss Rose that at fall of dew  
 (Ere eve its duskier curtain drew)  
 Was freshly gathered from its stem,  
 She values as the ruby gem;  
 And guarded from the piercing air,  
 With all an anxious lover's care,  
 She bids it for her shepherd's sake  
 Await the New Year's frolic wake,—  
 When, faded, in its altered hue,  
 She reads—the rustic is untrue;  
 But if it leaves the crimson paint,  
 Her sickening hopes no longer faint;  
 The Rose upon her bosom worn,  
 She meets him at the peep of morn,  
 And lo! her lips with kisses prest,  
 He plucks it from her panting breast.

A beetle is often represented on antique gems as expiring, surrounded by Roses; and this is supposed to be an emblem of a man enervated by luxury—the beetle being said to have such an antipathy to Roses, that the smell of them will cause its death. There is a saying that a Rose will not blossom on being transplanted into any country in which it is not indigenous, until it has first been burnt down. It has been asserted that in Chili this saying was verified by the fact that after the Roses which had been imported into that district had for several seasons been totally barren of all bloom, a fire accidentally occurred which burnt the bushes to the ground, and that from thenceforth the trees flowered freely. In certain districts in Italy, the red Rose is considered to be an emblem of early death, and it is an evil omen to scatter its

leaves on the ground. In the country churchyard at Barnes, in Surrey, England, near to the entrance door of the church, is an old inscription to the memory of Edward Rose, citizen of London, who died during the seventeenth century, bequeathing £20 per annum to the parish of Barnes forever, on condition that the railing enclosing his grave should be maintained, and Rose trees planted and preserved there in a flourishing state. The terms of the benefactor are still complied with.

### THE MODERN ROSE.

As much as the Rose was prized by the nations of antiquity, it has down to the present day continued to hold a foremost place in the estimation of all people who know it in every country in which it is grown, and it has at the present age more interest and capital invested in its culture than at any other period of its history. In consequence of this gleanings from our modern gardens must ever be acceptable to the devotees of "Our Queen." The beauty of the "Roses of June" has often been heard of in song and story, and "June Roses" are heard of in every land. Yet here in Tennessee June, the month of Roses, is a conspicuous misnomer. With us here all the Hybrid Perpetuals are in bloom the middle of April and continue in their great beauty for about six weeks, so that when June comes we are minus the Roses, as the Tea Scented and more tender varieties are not yet advanced enough to supplant with their blossoms the beauty of the more hardy and earlier sorts. On this account out door grown Roses in June are about as scarce here as apples in May. So it is evident the writers of the charms of "June Roses" got their inspiration elsewhere than in Tennessee, or any of the belt of States lying in the same

parallel of latitude east or west of this point. Probably nowhere in the world is Rose growing carried on more extensively for the production of buds in Winter than in the neighborhood of New York, and in a proportionate ratio in the other great cities of the North. In consequence of the great prices realized for Rose buds in Winter, and the fabulous reports of profits therefrom, speculative enterprise of capitalists in these large cities has been aroused, and New York now boasts of upwards of half a dozen of these enterprising individuals who count their income by the hundred thousand, engaged in the business of Rose growing. Tea Roses with but few exceptions are chiefly grown for this purpose. In Hybrid Perpetuals, General Jacqueminot claims most attention for its forcing qualities, and La France among Hybrid Teas. The Noisettes, such as Marechal Niel, are also forced into bloom by Christmas, at which season they bring a good price, as no yellow Rose that we know of North or South is more popular than the Marechal, and no bloom more chaste; it is suitable for either the reception parlor, the bridal altar, or the bier. It has a charm for all, and like the beauty of Tennessee and Kentucky maidenhood, will forever hold us enthralled. In England, Germany and France, the Hybrid Perpetuals are better known and more extensively cultivated than in this country, and the beauty and fragrance of an English or Dutch Rose garden in June is something never to be forgotten. It must have been from the inspiration of one of these gardens that the Rose was dubbed the "daughter of June," and most appropriately too in the climate named. The Hybrid Perpetuals are deliciously fragrant, and the prevailing colors are rich deep red and velvety crimson; of course there are lots of whites and pinks, but not in the proportion of aforesaid colors. If





Papa Gontier.

the lighter colors were in greater number, Burns might never have sang—

My love is like a red, red Rose  
That early blooms in June.

but chosen another color more typical of his modest Highland lassie. The climate and soil of England is especially suited to the Hybrid Perpetuals, and nowhere do they attain finer perfection. The grounds of Paul, of Waltham, Smith, of Worcester, Dicksons, of Chester, or Cranston, of Hereford, are all literal forests of these Roses. But the Tea Rose, the pet of every lady from the Ohio to the Gulf, are grown only in limited quantity, the dampness of their Summers and lack of bright sunshine not being conducive to their proper development. With us in the South the Hybrid Perpetuals will never be popular on account of their periodic blooming. We, however, enjoy them when they bloom, just as we would a beautiful opera, although we might hear daily all the same airs played upon a piano. Owing to the fact that the climate of the Southern States is particularly mild, and in the more Southern portion or Gulf States vegetation goes on unchecked from year to year where the tenderest of the rose family can flourish with impunity from the blizards and ice storms of the North. No Roses other than the Tea and Everblooming varieties will ever be favorites among us for their blossoms and fragrance; like the poor, they are with us always. We have not the patience in a land of perpetual sunshine to await the blooming of the tardy Remontans, without the intervening seasons were brightened by the blooming of our Teas. Of course the Remontan class will ever have a noble exponent of their charms in all Southern gardens in the varieties of Jacqueminot, Mabel Morrison, Paul

Neyron, and La Reine. The Noisette ranks next to the Tea family in the estimation of a Southern grower, for what would a Mississippi or a Louisiana home be if no Marechal Niel or Cloth of Gold cast its shadow or perfume upon its porch and threshold. These varieties may truly be said to be the Roses of the South. They give both beauty, fragrance and shade to the Southern cottage or mansion, and as long as the Mississippi flows, so long will the Marechal Niel, the Chromatelle, the Lamarque, the Glorie de Dijon, and the William Allen Richardson be found embracing the pilasters of the Southern mansion, or clinging to the fence rails of our cottage homes. In the Bourbon family Malmaison will ever be Queen; a more beautiful Rose for the Southern garden cannot be found. The Moss Rose, the Bengal, the Hybrid Tea, the Hybrid China, the Damask, the Province, and the Polyanthus, all have a representative in every collection of Roses South of the Ohio. We are by no means pledged to classes among Roses than among other things. We admire them all, but cultivate more extensively and love more sincerely those best suited to our climate and soil.

## CLASSIFICATION OF THE ROSE.

### THE FAMILIES OF THE ROSE IN GENERAL CULTIVATION.

In a work so limited as this it is impossible to go minutely into the classification of the Rose. Whole volumes have been written upon this subject, and a number of books are devoted exclusively to Roses. Those who wish further information on this point must secure one of those works. We have therefore determined to give a few in each class with particular attention to their adaptability to the climate of the Southern States.

## TEA ROSE.

This class may be taken as a synonym for all that is delicately beautiful. What refinement of color; what subdued, yet powerful fragrance do they possess! They are indeed the centre of loveliness; like fair maids at a reception, surrounded by admiring groups, they lend beauty to the others which may well strive to find a near approach to their sweet presence, that perchance they may receive a smile, and borrow beauty diffused from their chaste loveliness. Every one of this class is especially adapted to the South. Many of them need protection in this State. South of this line strong plants of nearly all this class will pass through our Winters unprotected without injury. The range of color is all that can be desired; the snowy white of Niphetos, the rich deep red of Duchess of Edinburgh, the pink of Catherine Mermet, and yellow of Perle des Jardin, are a range of color as beautiful as it is distinct. No other class of Roses has such a variety of color, and if we felt a desire to criticize, we could only say there is not enough of deep red color in proportion to the pinks, whites, yellows and creams; but this is no objection to the South, as Roses of the lighter shades are more popular in Dixie. Speaking to a prominent florist in Cincinnati in the Summer of 1889, who grows Rose buds by the wholesale and ships them to florists and others all over the South and West, he said: "How is it I never can sell any red Roses to your people in the South? All orders I send North or West, one-half at least is invariably dark ones, but orders from the Southern cities are almost without exception for white or yellow, and occasionally pink." The culture of the Tea Rose in the South is most simple; they thrive with but little care. A slight pruning in Winter just before they commence to make their Spring growth is

advantageous to them; also frequent working of the surface soil around the roots in Summer and a mulching of manure in November, will be about all that is needed. Madame Hoste, Souvenir de Wooten, Etoile de Lyon, Luciole, Marie Van Houte, Devoniensis, Safrano, Cornelia Cook, Papa Gontier, and La Princess Vera, are all well known in this class.

#### NOISETTE ROSE.

This class has a sub-division, namely, Noisettes and Tea Noisettes, both of which are of American origin. The Noisettes are of strong growth, and all hardy in the South. The varieties now most commonly grown have Tea blood in them, hence the term Tea Noisette, and to this class we confine our remarks. Of this class Marechal Niel is far in the lead. Chromatelle is another superb yellow, in beauty of flowers but a few degrees removed from the Marechal. She is, however, shy of her charms, and unless carefully treated will not display her beauty. If you would have flowers in profusion from these Roses, you must not prune severely except where it is necessary to cut away whole shoots altogether. All this class of Climbing Roses has no equal for the climate of the Southern States. The Lamarque, Celine Forester, Triomphe de Rennes, Glorie de Dijon and William Allen Richardson are all the best in this class.

#### HYBRID TEA.

This is a new group produced by crossing Teas with Hybrid Perpetuals, and consequently pretains a little of the characteristics of both. All of them do well in the South, and are entirely hardy in Tennessee and all States South of this point. They are of only moderate growth, need close pruning, and delight in a rich, stiff soil. La



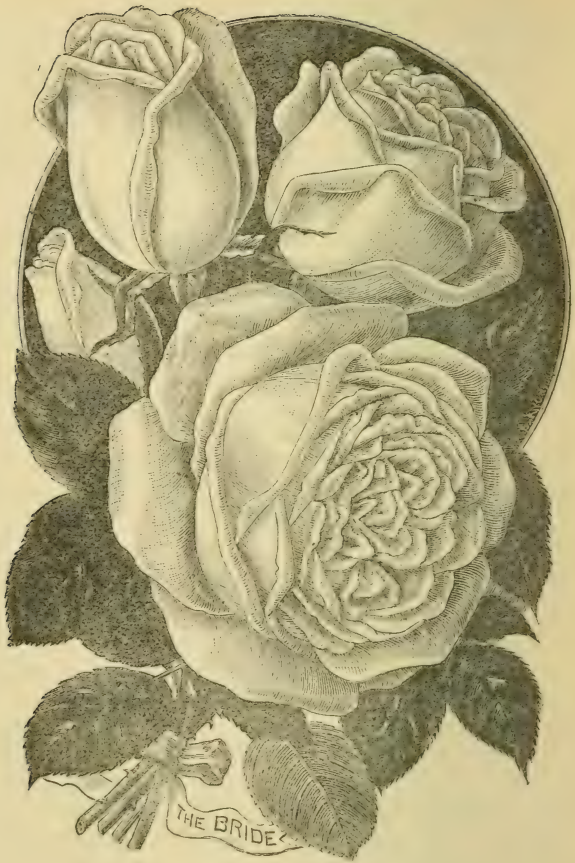
France, Beauty of Stapleford, Captain Christy, and Mad. Alexander Bernaix are a few of the best in this as yet not very extensive class.

#### BOURBON ROSE.

Hails from the Island of Bourbon; is entirely hardy in the South. The many varieties vary in growth and other features, are of vigorous habit, and have dark lustrous foliage. The flowers are generally of light shades, and are especially valuable in Autumn, as at that season they bloom abundantly. Souvenir de la Malmaison is the general favorite in this group, followed in rank by Hermosa, Appolline, Queen of Bourbons, and Queen of Bedders.

#### HYBRID PERPETUAL, OR REMONTAN ROSE.

Is by far the most valuable and more highly esteemed in Europe than any other class, but with us in the South we will give it a position of fifth in rank. This class is characterized by its wonderful hardiness, strong growth, and large flowers of the most exquisite fragrance; it possesses the finest deep red Rose and velvety crimson colors to be found in any class of Roses. To think they are perpetual bloomers, as the name might imply, is a mistake. They bloom most profusely in the early Spring, an occasional bloom through Summer, and again a few in the Fall. This shyness of blooming is our only objection to them, and in a climate like this, so conducive to the growth of Tea and Everblooming Roses, they can never occupy a foremost place. This class likes to be pruned severely, as the flower buds are always produced on the new shoots they make after being cut back. General Jacqueminot, Paul Neyron, Giant of Battles,



La Reine, Jules Margotten, John Hopper and Mabel Morrison are among the best in this class.

#### THE PROVENCE ROSE.

Is sometimes called Cabbage Rose; was known to the Romans. Its origin is not known, but growing abundantly in Provence, the South of France, has received that name, although the French themselves call it the botanical name, *Rosa Centifolia*. Their habit is drooping and straggling, the foliage massive; the flowers are generally of globular form, and of delightful scent, so that to say a variety is as fragrant as a Cabbage Rose is enough recommendation as far as scent is concerned. This is a small group, and was formerly an important one. Although blossoming but once, it would be well to have one or two varieties in every collection of any size.

#### THE POLYANTHA ROSE.

This was introduced from Japan, and is distinguished from all others by its paniced blooms. It is difficult to say much upon this class, as it is only a matter of taste whether they are appreciated or not. We have heard ladies of fine taste descant for weeks on the beauty of a bed of these Roses; would call them all the dear and sweet little things imaginable, others would pass them by with the simple remark "'aint they cunning," while others would ask in derision why we did not grow a bed of dog fennel, for they were sure it would be just as pretty. Anna Maria de Montravel and Md'lle Cecile Brunner are best known in this class.

#### THE MOSS ROSE.

This is a sport from the Provence and was introduced from Holland. They are distinguished from all other

Roses by a moss-like substance that surrounds the flower buds. The shoots are thickly covered with small spines or thorns. They are much subject to mildew, like close pruning and rich soil. On account of the beauty of their buds they are always favorites; their only drawback is their tardiness to bloom; being Summer Roses, they bloom but once in the season. Salet and Crested Moss are best known in this class.

#### BENGAL, OR CHINA ROSE.

This class is a native of China, is of moderate branching growth, with foliage and flowers both small; requires a rich soil and close pruning. Thus favored, they give perhaps a greater quantity of flowers during the season than any other class. They have no fragrance, but in spite of this they are valuable on account of their crimson buds, which are furnished by such sorts as Agrippina. A variety of this class has marked peculiarities, *Viridiflora* or *Viridiscens*. Its peculiarity consists in green flowers, which are freely produced; though curious they are not attractive, and have no value except as a curiosity. James Sprunt, Louis Philippe and Clara Sylvian are best of this class. What are called Fairy Roses are miniature Bengals; they are of no value—the Bengals are small enough.

#### THE AYRSHIRE ROSE.

This is of English origin, are of slender, rapid growth, have five leaflets, often running fifteen or twenty feet in one season, and are used for covering buildings or unsightly objects. As we have so many finer Roses that answer this purpose in the South, we cannot afford this class even the lowly position of climbing over our back yard fence.

## THE BANKSIA ROSE.

Is a native of China named in honor of Lady Banks. It was brought to England in 1807. The flowers are very small, resembling double cherry blossoms; are produced in clusters early in the season, and have generally a decided violet perfume; indeed it is doubtful if many persons blindfolded could by the odor distinguish them from violets. The wood is smooth, slender and of rapid growth. The leaves are often but three in number; are long, dark and lustrous. They are hardy in the South and form a desirable group. The best are *Alba Grandiflora* and *Fortunes*, white and yellow.

## HYBRID CLIMBING ROSES.

This class takes in those sorts for which it is difficult to find a group where they can be appropriately placed. It gathers in waifs, and is a kind of an orphan asylum, a place of refuge for the abandoned and unknown. They are of but little value in the South.

## CHEROKEE ROSE.

Is a large-flowered single variety, a native of China. In the Southern States, where it has become naturalized, it is held in high esteem for the graceful habit of the plant, with its vivid green, glossy leaves. The flowers are of the purest waxy white, and are produced in the greatest abundance. It is often used for hedges, and for this purpose few plants could be better adapted.

## THE MUSK ROSE.

Is one of the oldest Roses in cultivation. The original is a native of Madeira, Persia, and the North of Africa. The plants are rapid growers and profuse bloomers, in habit resembling the *Noisette*, requiring the same treat-



ment in growing. They are late in flowering, not coming into bloom until about the first of September. They receive their name from the fact of their having a peculiar musk-like scent. They are hardy in most Rose-growing countries, and receive but little attention from growers.

#### THE MANY FLOWERED ROSE.

Is a native of Japan; has from five to seven leaflets; flowers in clusters and continues for some time in bloom; the flowers are double, small and of no great beauty. It is of no use in the South, though it is grown to considerable extent in this country and sold to tree peddlers, who make large sales of it by means of exaggerated colored plates, accompanied by untruthful descriptions.

#### THE PRAIRIE ROSE.

Is indigenous to this country, being found in many of the Southern and Western States. On account of their entire hardiness, they are very popular in the North as Climbing Roses, but the tender and more beautiful Noisettes that seem so much at home on the Southern arbors and porch rails, completely usurp their position with us. They are not intended for our climate. Baltimore Belle and Gem of the Prairies are the best known in this class.

#### DAMASK ROSE.

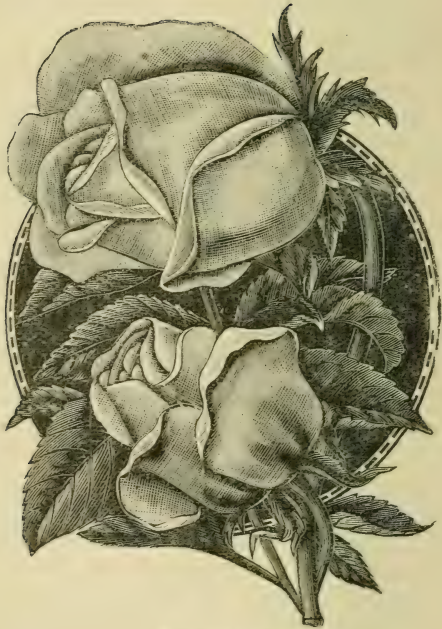
Is a native of Damascus and various portions of Syria. From this class, and also from the Province, most of the Rose water is distilled. These have pale green leaves, green shoots, with numerous spines, and are of vigorous growth, light color and fragrant. Not much grown in the South.

There are still many other classes of Roses not enumerated here, being so poor and of so little account in

the Southern Rose garden that we will not touch upon them. In the foregoing classes will be found all that is beautiful in the Rose, and all that is desirable for our climate. We do not wish to be understood to say they are useless the world over, for in different climates they they have their peculiar advantages, and in this land of well nigh perpetual Summer we would be prone to sigh for the various charms that their absence would evoke in the heart of a true rosarian, were it not for the wealth of a thousand others more beautiful that gladden the pathway through our garden. Like the old adage, "out of sight out of mind," when the new love supplants the old, it is with a loyal reverence we say adieu to those groups which have inspired our lives with so much gladness; but we cannot long remember them here, surrounded as we are by such an abundant harvest of continuous blooming sorts; therefore the tears of our memory must dry away as swiftly as the dews of Summer.

#### POSITION AND SOIL.

The first requisite in the culture of Roses is the selection and preparation of a suitable place for planting. This is very important, as all that follows depends upon the care used in this first step. To begin with, then, choose the best place you have in the garden. When fences are used, their general ugliness can be most appropriately clothed by Roses themselves. A warm, sunny position is also requisite; if so situated that there is an exposure to the morning sun, and the hot rays during the afternoon are in part or wholly shaded, all the better, but a certain amount of sunlight is as essential to a Rose's welfare as to our own, though many of us do not show our appreciation of the blessings of sunlight as gratefully as do our Roses. Besides scattering them through our



Etoile de Lyon.

gardens, Roses may be made very effective planted in borders about our lawns, either individually or in groups, and also planted in beds on the lawn. Thoughtlessness often leads people to plant Roses under the shadow of overhanging buildings, or close to large deep-rooted trees; and then there is inquiry and wonderment why the plants are always covered with mildew, and why they do not blossom and grow as those in a neighbor's yard, where there are always beautiful Roses to be seen. There is much more in common, or should be, between animal and plant life, than is practically acknowledged by most of those who strive to grow Roses. Both demand for their perfect development a sufficiency of nourishing food and drink, a pure atmosphere, a temperature as equable as possible, and thorough cleanliness. Let every one who plants Roses bear this in mind, and we shall find a wonderful improvement in the quality and quantity of the flowers. Some having heard that a free circulation of air and abundance of sunshine are essential elements of success, select a spot which would be excellent for a windmill, observatory, beacon, or Martello tower; and there the poor Rose stand, or more accurately speaking, wobble, with their leaves like King Lear's silver locks, rudely blown to-and-fro by contending wind and rain. Others who have been told that the Rose loves shelter, peace and repose, have found such a dear snug little spot, not only surrounded by dense evergreen shrubs but overshadowed by giant trees. Rest is there assuredly, rest for the Rose, when its harrassed life is past, when it has nothing more for disease to prey upon, no buds for the catterpillar, no foliage for the aphis, the rest of a mausoleum! We were taken not long ago to a cemetery of this description, and there was such a confident expression of praise upon the face of the lady who took us

that we were sorely puzzled how to express our feelings. We wished to be kind and wished to be truthful, and the result was a dubious compliment of that it was a pretty place for ferns, and therefore our commentary was received with an expressive smile of genteel disgust, as though we suggested the plot in question was the sight of all others for a jail. Then without further prevarication we told the truth. And the truth is, that this boundless contiguity of shade is fatal, and every overhanging tree is fatal as an upas-tree to the Rose. The Rose in close proximity to a forest tree can never hope to thrive. In a two-fold sense it takes umbrage; robbed above and robbed below, robbed by branches of sunshine and by roots of soil, it sickens, droops, and dies. In connection with a choice of location, we must see that Roses are provided with a proper soil. They will do well in any ordinary garden soil that is free from standing water and well drained. When there is too much clay, the soil can be made sufficiently friable by the application of wood and coal ashes, lime, burnt earth, etc. When, on the other hand, a soil is sandy or too light, we need to bring clay, muck, leaf mould, etc., to obtain sufficient body. This soil must, of course, be thoroughly manured and worked; frequent spading will do a great deal toward lessening the stiffness of a heavy soil. Most of the Northern as well as English writers on the Rose give especial instructions as to drainage and the disadvantages of a wet soil. With us in the South this requires no consideration; we have but little rain through the Summer, and for the greater portion of the year our soil is more often too dry than too wet. Therefore as our Winters are very short and the growing season of the Rose a very long one, we would advise the selection of a moderately low lying situation that will not quickly dry out during



the great heat of our Summers, and where the water will not rest through December and January. A slight declivity to the East or West in the Southern States is to be preferred to a one to the North or South. They might not get sufficient sun with a Northern exposure, while an exposure to the South is very trying on tender and weak growing varieties through the months of July and August, when the sun is so exceedingly hot and ground dry, without ample facilities for irrigation or sprinkling are at hand. Manure if new should never be applied so as to come in contact with the roots, but may be spread upon the surface of the earth as a mulch in the Fall and dug in the following Spring. All animal manures are good for Roses, particularly the droppings of the cow, pig and sheep. Besides these, the cleanings of the poultry house, bone dust, and guano, will be found excellent. Horse manure is better for heavy soils than for light, and cow manure is to be preferred for a light soil. A good watering of liquid manure will be a great benefit to the plants, more especially during the time of their formation of flower buds, and at all times of drought. This is as good a restorative and tonic to the Rose as the waters of Apollinaris and Vichy is to fellow man. Only remember that weak and often is better than strong and seldom. Another point in the planting of Roses is the arrangement of color. Do not plant all your reds and whites and yellows together; mix them judiciously in your borders. A white Rose never looks so white, or a red Rose so red, as when grown side by side. One color brings out or rather makes the other appear all the more brilliant, has a better effect, and shows more diversity of color. It is told of a highly sensitive dame whose silly pride was in dress, that she went into hysterics before a large party when her great rival in millinery came and sat upon the otto-

man beside her in a grand garment of the same color as her own, but of a much more brilliant and effective dye; and I have seen many a Rose which would weep, if it could, aromatic Rose water, subdued by a like despair. Once upon a time six pretty sisters lived at home together always. In looks, in figure, in voice, gait, and apparel, they exactly resembled each other. Young gentlemen seeing them apart, fell madly in love, as young gentlemen ought to do; but on going to the house and being introduced to the family they were bewildered by the exact similitude, didn't know which they had come to see, couldn't think of proposing at random, made blunders, apologies, retreats. It seemed as though all these charming flowers would be left to wither on the virgin thorn, when one of them was permitted to leave her home upon a visit to a distant friend. She returned in six weeks betrothed, and six months after was a bride. The rest followed her example. So it is that the six scarlet Roses or six pink Roses in close proximity perplex the spectator, and depreciate each other by their monotonous identity; isolated or contrasted we admire them heartily.

#### PLANTING AND PRUNING.

In most of the Northern works the chief feature in Rose culture is Winter protection, but since our Winter season is so comparatively mild, the tinkle of the sleigh bells and the persisting wooing of old Boreas are pleasures (?) we are unaccustomed to. A Texas norther is as much of these fleeting enjoyments as we have any desire to enjoy. In view of this, much as we prize our Roses, we will let them take care of themselves in Winter, except a mulching of manure in Fall as was previously recommended, and will confine our remarks to planting and pruning, as next to their propagation they are the most

important points of Rose culture to be observed in the South; and to all who love their Roses and attentively care for their cultivation, we know they must be amply rewarded with beautiful blooms, and would here recommend to their notice that beautiful passage from Rev. Canon Hole's book about Roses: "He who would have beautiful Roses in his garden must have beautiful Roses in his heart. He must love them well and always. He must have not only the glowing admiration, the enthusiasm, and the passion, but the tenderness, the thoughtfulness, the reverence, the watchfulness of love." Roses that have been grown out of pots should be planted while in a dormant condition; for, if transplanted while the sap is flowing freely, and the plant is in vigorous growing condition, there occurs too great a shock, one from which the plant does not easily recover. All Roses, therefore, taken from the open ground should be planted during the Autumn or Spring. Plants that have been propagated from cuttings, should be set, as nearly as possible, as they were grown in the nursery. Budded or grafted plants should be set so that the junction of the bud or graft is about two inches beneath the surface of the soil. Planted in this way there is much less liability of suckers from the stock being put forth, and opportunity is afforded for the plant to put forth roots from the bud or graft; this often takes place, so that ultimately the plant is virtually on its own roots. Roses that are pot-grown can be planted at any time from April till October, but if set out during the heat of Summer special care must be given in watering, etc. Respecting the sized plants which should be set out, we earnestly advise all those who can obtain them to put out plants of one or two years' growth that have made a free but not excessive growth, with well-ripened wood; these can be obtained



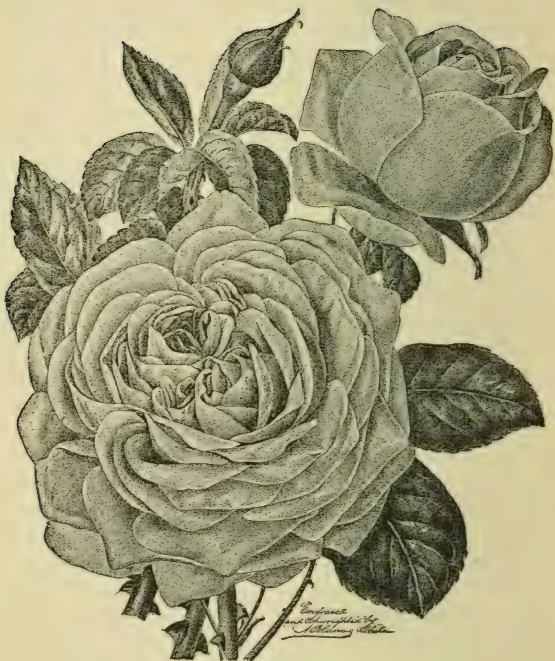
Madame Hoste.

at most of the large reliable nurseries. Many florists do a large and exclusive business in sending by mail small plants, cuttings of a few weeks' growth; this is all very well, to give opportunity to many people to obtain plants which could not, owing to the lack of express or railroad facilities, be forwarded in any other way; but these bantlings often require much care and tender nursing, and are seldom of any account until the second year from planting, for in order to promote their growth the flower buds should be kept cut off during the first year—if allowed to produce any, they are not only not of first quality, but enfeeble the plant; whereas older plants, carefully grown, will give effective results the first year. Some nurserymen make a practice of cutting away all the flower buds from free blooming varieties, which form on the young plants during the first year's growth; this practice is highly to be commended; such plants are far more valuable to the purchaser than those not so treated. Quality should always be preferred to quantity; this is true whether respecting the plants or the flowers of Roses, and one good two-year plant is worth more than six of the sucklings often sent by mail—poor, weak infants, which never should have been sent from the “nursery.” Care must be exercised that the soil about the plant be well pulverized and no hard lumps allowed to remain in contact with the roots; after the plants are set out, be sure that they are firmly pressed in with the feet or hands; plants that are loosely stuck in the ground can never do well. Another prominent thing to bear in mind is: never allow the plants to lie exposed to the wind and sun, keep them covered until ready to plant. The distance apart is somewhat regulated by the vigor of the growth; the strongest growers should be put about three feet apart; for those of weaker habit, one or two feet



would suffice. In planting beds, if of more than one variety, the strongest sort should be in the centre and those of the weakest habit on the outside. It is almost unnecessary to say, that no planting should be attempted if the ground be very wet, or very dry, as during a Summer drought; and that very late in the season, whether Autumn or Spring, is not a good time to set out Roses; few things suffer so much from late Spring planting as do Roses; if the buds have pushed forth, it is generally time and money thrown away to set out plants, other than those pot-grown. The reason pot-grown plants can be used after the others, is that the soil in which they are grown can be retained when the Roses are removed from the pots, and the plants continue to grow without check. Pot-grown Roses must not be immediately exposed to the rays of a hot sun; if planted out they should receive some shade for a few days, and be carefully watered. Water must not be applied during the heat of the day, but in the morning or evening. The pruning of Roses is one of the most important features connected with their culture, but no directions that can be given will prevent some mistakes from being made. It is practical experience alone that will enable one to determine just what is to be done in each individual case, and just how to do it; but the general principles that should govern can be easily stated and comprehended. I would recommend the operator to procure what is known as a pruning-knife, having a hooked blade, and also a secateur, or pair of pruning-shears; the latter is better for cutting away shoots from the centre of a bushy plant and is the quickest and most easy to handle, but where a very smooth cut is desired, the pruning-knife will be found most effective; it is also less likely to bruise the bark. All Roses that come from the open ground should

be pruned before planting, or immediately after. Many persons who are careless, or not informed, set out the plants just as they come from the nurseries; under such circumstances the plants cannot thrive, the sap has too many buds to nourish and a weak growth ensues. The shock from transplanting must be met by a shortening of both shoots and roots; the shoots being shortened the number of buds to draw upon the sap is reduced and a more vigorous growth follows. Not only should all bruised roots be pruned, cutting away to the sound part, but also all those large ones that are uninjured, for by this they are induced to put forth small roots of fibrous nature, which are of great assistance in promoting health and vigor of plant. The cut made in pruning should be as nearly horizontal as possible, so that there shall be but a slight exposure of wounded surface; it is generally preferable to cut from the inside, and to see that the top bud which is left points outward. If the plants bleed after the operation, the surface of the cut should be smeared over with wax or other substance; often a coating of mud will answer. Roses are pruned both early in the Spring and in the Autumn; we prefer the former season, but when done then, care must be had not to put it off too late, for if not attended to early, the sap will have pushed toward the upper buds, and when pruned there will be bleeding or exuding of the sap. The pruning should therefore take place while the plants are dormant, and before the sap begins to flow. The chief objects to be held in view in pruning are the formation of a symmetrical plant, and to promote the formation of bloom buds. To secure these the following general rule must be observed: Plants of delicate habit and weak growth require severe pruning; those that are vigorous in growth should have the shoots only moderately short-



American Beauty.

ened, but the branches well thinned out. If varieties of vigorous habit are closely pruned, a great growth ensues and very few flowers; hence it is of the utmost importance to know the character of the variety that is to be operated on.

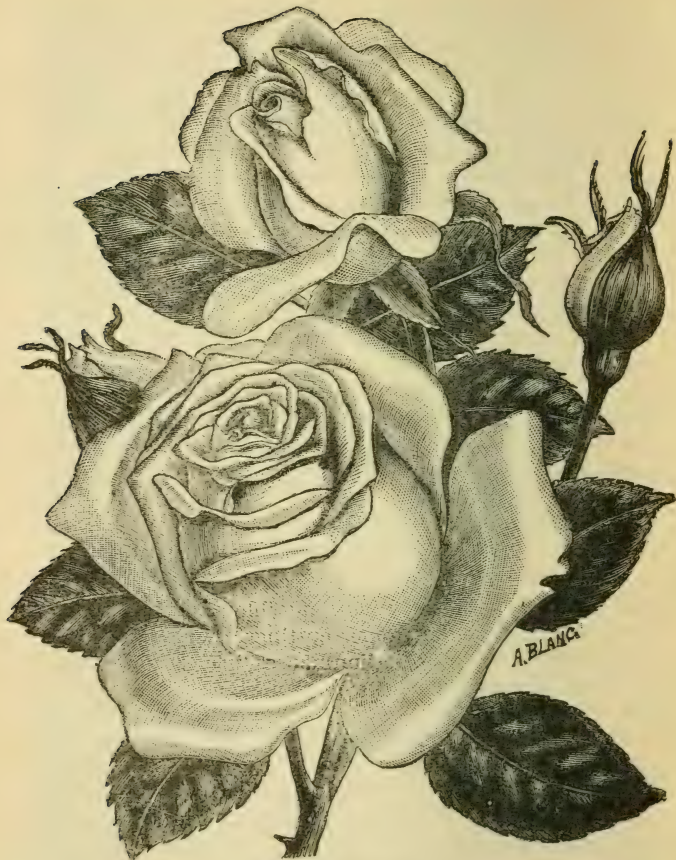
### PROPAGATION.

There are five methods used in the propagation of the Rose: by cuttings, by budding, by grafting, by layering, and by seed; in importance they rank in the order named to all American cultivators. Our European brethren far excel us in the production of budded and grafted plants, as more than two-thirds of the plants raised are propagated in this manner; their cool Summers, with attendant atmospheric moisture, being especially suited to this mode of propagation. As this system of propagation cannot be carried on satisfactory in the climate of the South, and moreover as we are not particularly fond of budded or grafted Roses, we will not treat the subject further. The propagation from seed is not much carried on except by the skillful hybridiser in his experiments in the search of new and improved varieties, and as this is a branch not particularly interesting to the Southern amateur, for whom this book is intended, we will not further consider the subject. The system of layering also has its devotees, but not with us, therefore our remarks will be confined exclusively to the propagation by cuttings, the great and only successful American system by which we excel all countries on this, as they do us with their modes. The great Rose growing concerns of this country raise them in this manner by the hundred thousand; the mechanic in his home plot, and even the bright-eyed school girl, will tell you she is rooting some Rose slips. In the great Rose growing establishments of this country, the propagation of the Rose is

classed under two different heads, namely, Summer and Winter propagation, and in both cases the success is about equal, thus giving us an extended season for this all important operation that the devotees of other systems cannot enjoy, as the budding and grafting methods cannot be done successfully more than two months out of the entire season in the climates it is most advocated. The system of propagation so successful with commercial florists is not practical for ladies or amateurs in the South who only raise a limited number of plants for their own enjoyment, and a method more suitable to the requirements of these parties we will hereafter more particularly treat. Winter propagation, as generally done in most commercial places, is carried on in the following manner: The first act of importance is the proper selection of the cuttings. The rule that applies to soft wooded plants, such as Fuchsias and Geraniums, that is, that the young shoots should be in a condition to snap and break rather than bend, to make the best cuttings, does not apply to Roses. The young shoot of the Rose is what is to be used, but it must be hard and woody; for example, when a Rosebud is developed enough to cut, the shoot on which it grows is in proper condition for cuttings. Each leaf of the shoot with its bud at the axil, and two or three inches of stem, makes a cutting that is called a one-eyed cutting. They are simply made by making one rather slanting cut between the joints, or about a quarter of an inch above the eye. About one-third of the leaf is cut off, mainly to admit of more cuttings being put in the cutting bench. If by any reason the leaf is taken off, a Rose cutting in this condition will never make a good plant; or if from any cause the leaf drops off while the cutting is in the process of rooting, not one in ten will make a satisfactory plant. A popular error in the mak-



ing of cuttings, not only of Roses but of other plants, especially so with English and other florists not receiving their training in the United States, is that the cuttings must always be cut off below a joint; that is, that a joint should be retained on the extreme end of the cutting; this would necessitate two joints on the cutting, one on top and one on the bottom, which is a great waste of cutting wood, a serious disadvantage where new kinds are being propagated and cutting wood scarce, as with the two joint system it takes as much wood to make one cutting as would make two with the single-eye system. The joint on the end of the cutting has nothing to do with its rooting; of course it will root with the joint on the end, but it will root just as well if not better without the joint being there at all. This is a hard fact for foreign florists to learn when they first begin their operations in this country, but practice and experience will soon demonstrate the truth of all that has been said in favor of the one eyed system. With amateurs who have plenty of available cutting wood on their Roses, and do not wish to raise them in quantities, the above remarks will have no special interest, as where the wood is plenty two and three-eyed cuttings are equally suitable for their purpose. After the selection of proper cuttings, they are inserted in the beds in the propagation houses, in clear pure sand. No mud or vegetable matter of any kind, or soil of any description, is allowed among the sand; clean, gritty or sharp sand is best. The pipes that heat the propagation houses pass directly under the benches, and are boxed in with boards or other material so as to retain the greater portion of the heat directly under the cutting bed and cause the temperature of the sand in which the cuttings are inserted, or the bottom heat as it is generally called, to be several degrees warmer than the atmosphere of the



Perle des Jardins.

house to which the upper portion of the cuttings are exposed. The temperature of the sand on the cutting bed must be retained at from 65° to 70°, with the temperature of the house 10° less. With the maintainance of an even temperature, frequent syringing and sprinkling to keep up a proper degree of atmospheric moisture, and a judicious shading from the warm and drying sunshine, Roses will under these circumstances root in from twenty to twenty-five days anytime from September to January.

#### POTTING.

As soon as the roots begin to form they should be potted up. It is a mistake to allow them to make too much roots in the sand before potting. A nice mixture of stiff loam, with about one-third well decayed cow manure and a little sprinkling of sand, answers this purpose admirably. For a couple of weeks after potting they should be subjected to about the same temperature as that of the propagation house, as at this tender stage of growth they cannot stand any great change of temperature. As soon as they show signs of making new growth and the root action becoming active, they may be exposed to the full light of the sun and freely ventilated and syringed daily, and as their growth demands it, if intended to be grown in pots, they should be changed to larger pots from time to time. Where they are intended for out door planting, they may be set out as soon as they attain a fair size and fill the pots they are first put into from the cutting bed, with a good ball of roots. The same sand should never be used a second time for the next batch of cuttings. This sand is good enough to root several batches of Geraniums and soft wooded plants after the Rose cuttings are taken out of it, but to have

the highest amount of success, fresh sand should be secured for every batch of Rose cuttings.

#### SUMMER PROPAGATION.

The details and the principles involved in this very important method of propagation are the same as in Winter propagation, the only difference is the bottom heat supplied by the pipes and boilers in the Winter, has in Summer to be obtained from hot beds of fermenting manure. These beds are usually made during the months of May, June and July, in some out of the way place, filled in with stable or horse manure that will heat to a depth of from twenty-four to thirty inches; it must be firmly beaten down, and about four inches of sand of quality as before directed, placed on top of this, which also must be made as solid as possible by beating it with a mallet or brick; the sash should slope to the north, and posts must be put in the ground all around the bed so as to nail some slats across to support the shading which must be tacked on all over the bed, so as to completely obscure the scorching rays of the sun we have at that season of the year. An opening in the shading may be left on the front and north side of the bed, where you may pass in and out to attend to the watering and ventilation of the cuttings, as the sun will never strike the bed from that side. Have the shading sufficiently high, so that you can walk under it around your bed, as it is more convenient and allows of a greater circulation of air between the shading and the glass, which will result in keeping the top or atmospheric heat less than the bottom heat, or that given by the manure. If the top heat should by any mishap be kept in advance of that at the base of the cutting, success can never be obtained. It may seem strange to many, the necessity of making a

hot bed in the months of July and August, when our thermometer registers 90° in the shade, but it is nevertheless true, for the object aimed at is a good bottom heat at the base of the cuttings, with the lowest possible temperature at the top. After the bed is first made it will become very warm, but the cuttings must not be put in until the temperature has fallen to about 70°. They need the same care as to sprinkling as given for Winter propagation, and much more caution as to ventilation. The leaves should have a slight sprinkling with the syringe at least three times a day, never giving enough to keep the sand too wet, only just to moisten the foliage. At the same time a proper degree of moisture must always be maintained in the sand, and never allowed to become dry. The selection of cuttings, the potting and all subsequent operations, will be the same as directed for Winter propagation. By either of these two methods, Winter and Summer propagation, more than three-fourths of the Roses that swell Uncle Sam's mail bags in Spring, and glut the express company's offices for nearly one-half the year, are grown, but to small growers not directly in the florist business, either of the above systems might not be practicable, and in the Southern States they can be rooted with great success in the open ground or in cold frames, during the Winter months.

#### PROPAGATION IN THE SOUTH.

For this purpose ripened or hard wood may be selected and the operation performed at any time from October to January. The cuttings in this case are usually made larger, generally with three or four eyes, after the wood is ripened enough to show the development of the buds in the axils of the leaf. The method most successfully practiced is to place the cuttings in a cold frame as before





Nephtos.

recommended, or in the open air as far South as Savannah, Ga., Louisiana, Florida, the lower points in Mississippi, Arkansas, Alabama, and Southern Texas. The long heated Summers raise the temperature in the sandy soils in these sections as high as the atmosphere in the Winter months, if not higher in fact, forming a sort of a natural hot bed. All then that is necessary is to make the cuttings as above described and make a trench deep enough to plant them, leaving only one or two eyes or buds above the ground. Care must be taken to force the cuttings well in with the feet, so as to exclude the air. The cuttings may be set in trenches about four inches apart, and about two feet between the lines. Cuttings of Roses planted in this way in these States in November or December, will form roots by February, and if left to grow where placed without being disturbed, will by the following September make growths from one to three feet in height, according to the variety used. In parts North of these sections previously named, the cold frame had better be used for the cuttings. They ought to be inserted from two to three inches apart each way in November and keep above freezing through the Winter. Those not having the convenience of a cold frame, can do equally as well with the protection of ordinary garden or hand glass, or even some old discarded window sash could be found and temporarily fixed up for the occasion. For the cold frame propagation it is not necessary to use sand exclusively, a good light sandy soil will answer for this purpose. One watering when put in to settle the soil around the cuttings, is usually about all that is necessary until they begin to root in Spring. Thus treated they will be rooted by March, and should be potted up, or the strongest might be planted out in Spring at a favorable opportunity, when cloudy and wet, for as

no ball of roots can be lifted with them, it would not be safe to transplant them during a dry time or later in Summer. If neither potted up or planted out in Spring, they should stand unmolested until Fall, when they may all be planted out in the garden where desired.

### INSECTS AND DISEASES.

As beautiful as the Rose is, and as gaily as she flaunts her regal petals to the envy of all other garden flowers, she too has her moments of disease, and a number of troublesome pests assail her. But he who loves his Roses will not allow any of these difficulties to impede the progress of the culture of his favorites, but rather he is incited to succeed in spite of these drawbacks. Knowing that a faint heart never won a fair lady, he cannot expect the smiles of Catherine Mermet or Marie Van Houtte unless he thoroughly cultivates the acquaintance of these beauties and waits upon them with more attention and deeper concern than would the gallant of the ball room upon the attendant belles. The following are the chief foes with which the Rose has to contend:

#### THE APHIS

or Green Fly is well known to all who have grown Roses. It is a small green louse about one-eighth of an inch in length when fully grown. Through their slender beaks they suck the juices of the plant, always working at the tender shoots, and in a short time will, if unmolested, destroy the vigor or vitality of any Rose they infest. The best destructive agent to use against them is tobacco; if growing in a pit or greenhouse it may be burned so as to make a smoke. Care must be taken not to smoke it too much: better light applications and repeat a couple of

times until the fly is dead. In sections where tobacco is plenty, a sprinkling of the stems or refuse from tobacco stemmeries among the plants will keep them away. We always keep plenty of tobacco stems in all our Rose houses, either scattered among the plants or on the floor or under the benches, and in consequence never have any trouble from Green Fly. If the plants are grown out of doors, and infested with fly, a liquid solution made from tobacco stems will be found an efficient method of working their destruction. Take some tobacco stems and place in a tub or vessel of some kind, and pour boiling water upon them until the liquid has the color of strong tea; after it cools of sufficiently to handle it, apply it to the Rose with a syringe or wisk broom; a little soft soap or whale oil soap added to the solution will greatly aid it in its efficacy.

#### MILDEW.

This is a fungous disease often caused by great and sudden atmospheric changes, and a long continuance of damp cloudy weather. The best remedy is sulphur, and should be applied the moment the disease makes its appearance, which is in the form of a white or grayish substance covering the leaves and causing them to crumple and become deformed. The plants should be sprinkled first with water so that the sulphur will stick; the best plan is to apply it in the morning while the dew is upon the plants. After a few days the sulphur will all fall off and the mildew disappear. This treatment applies to Roses grown both in-doors and out, but if grown in a pit or greenhouse the best way is to mix the sulphur with water to the consistency of a good stiff paint, and apply it to the pipes or heating apparatus in the house with a brush. The fumes given off from this will at once check the ravages of the mildew.



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Madame de Watteville.



## BLACK SPOT.

This disease seems to be troublesome in many places, and Rose growers in the Northern States have suffered much from its ravages. It has of late made its appearance in many places in the South, although at present it is not generally known. The Hybrid Perpetuals and the Hybrid Teas appear to suffer most from it. As its name implies, it is a black spot that comes upon the leaves of the Rose, and gives it a blighted appearance. As soon as the plant becomes infested with it, it loses all its vigor and will cease to make further growth. The real cause of Black Spot is at present a disputed question, some contending that it first affects the plants through the leaves; others again contend that it is first caused by a loss of root action; but as far as we have been able to investigate, there are no two cases exactly alike, so that it is very hard to determine what is the primary cause of trouble in both cases, and this disease is to-day less understood by the most practical men in the business than any other disease peculiar to the Rose. Since the causes from which it emanates is so badly understood, it is of course equally difficult to suggest a remedy. When grown in greenhouses, the best means of checking the disease we have found is a healthy, dry atmosphere at night and a free circulation of air during the day, with a little fire heat to counteract any cold draughts. Where Roses are infested with Black Spot in the open ground, the best remedy is to cut the plants back and remove all leaves infested; when it starts to grow again the chances are that the Black Spot will not appear.

## RED SPIDER.

This is a most destructive little insect, and generally commits its ravages in a greenhouse or pit, and only

make their appearance when favored by a hot and dry atmosphere. These are very small, scarcely distinguishable by the naked eye; if isolated, they are of a dark reddish brown color, found on the under side of the leaves, and cause the foliage to assume a yellow tinge, and soon make sickly the plants they infest. A few applications of whale soap dissolved in warm water, mixed with tobacco water, applied with a syringe and thrown upward so as to strike the underside of the leaves, will soon destroy them. This insect does not attack plants that are syringed with water daily, and all plants grown under glass, not in flower, should be sprinkled overhead with water daily.

#### ROSE HOPPER.

This is another troublesome pest with which the Rose is afflicted in the open ground. It is a small yellowish white insect about three-twentieths of an inch long, with transparent wings. Like the Red Spider they prey upon the leaves, working on the under side. They go in swarms, and are very destructive to the plant. As they jump and fly from one place to another, their destruction is less easy to accomplish than is the case with other enemies. Syringing the plants with pure water, so as to wet the under side of the leaf, and then dusting on powdered hellebore or tobacco dust, will destroy or disperse them.

#### ROSE CATERPILLAR.

These are the young moths or butterflies, varying from one-half to three-quarters of an inch in length. Some are green and yellow, others brown. They all envelop themselves in the leaves or burrow in the flower buds. Powdered hellebore will prevent in a large measure their moving over the plants, but the only method of killing

them that is really effective is picking them off with the finger and thumb and tramping them under foot.

#### ROSE SLUG.

These slugs are the larva of a saw-fly, about the size of a common house-fly, which comes out of the ground during May and June. The female flies puncture the leaves in different places, depositing their eggs in each incision made; these eggs hatch in twelve or fifteen days after they are laid. The Slugs at once commence to eat the leaves, and soon make great inroads upon the foliage if not checked. They are about one-half an inch long when fully grown, of a green color, and feed upon the upper portion of the foliage. The best remedies are powdered white hellebore, or a solution of whale oil soap.

#### CLEANLINESS.

There are other enemies that trouble the Rose besides these named, but as we want to make this book a book of Floriculture, we will desist now in the further massacre of the bugs. We have given a list of remedies for controlling the ravages of the various pests which worry the Rose, and would remind our readers that prevention is better than cure. Cleanliness, a pure atmosphere and the free use of water upon the foliage of our Roses in the morning and evening, will be conducive to their healthfulness. A watchful care with systematic attention to watering and syringing will keep away insect pests that otherwise would come to torment us. In suburban gardens, where water is conducted in pipes from the water works, it can readily be applied with fine effect with the hose, and a vigorous application of water is as hateful to the insects in question as it is to fighting cats, and every one who grows Roses (or cats) should be provided with

that most useful implement, the garden syringe; it is a most valuable implement of defence and offence, whether used in keeping off Rose bugs or the caterwauling marauders that may come within range.



## CHAPTER II.

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# CHRYSANTHEMUMS.

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### HISTORY.

When Autumn winds are singing requiems  
For the Summer long since dead,  
Chrysanthemums come bravely blooming,  
In their yellow, purple, red.  
Although the wind fortells the Winter by its piteous moans and  
sighs,  
In the hue of these bright flowers may be seen the Summer skies.



**A**BOUT the year 1689 the Chrysanthemum was introduced into Holland, and subsequently into England in 1700. There is no particular data as to their importation into this country, but have been found here as early as 1820. After their importation from China, their original home, they were called by different names, such as *Matricaria*, *Anthemis* and *Artemesia*. By the latter name they are still known to the present day by many amateurs and ancient florists. After some disagreements among the botanists at that period, they were finally called *Chrysanthemum*, from *chrysos*, golden, and *anthos*, a flower. They were first cultivated in England by that celebrated gardner, Miller of Chelsea, but was soon afterwards lost by some unfortunate accident, and were again



introduced in 1795, and it was not until the beginning of the nineteenth century that they attracted much attention. At about this time they escaped from the conservatories of the curious, and soon spread rapidly over every part of the island, filling the windows of the cottagers and the porters of the opulent with their Autumnal beauty that now vie with the Rose in variety of color. The first plant that ever flowered in England bloomed in Colville's nursery in the King's road, Chelsea. At this time Chrysanthemum growers were satisfied with the imported Chinese varieties, until a few seedlings and accidental sports were being raised, and then the introduction of the then famous Guernsey and Jersey seedlings gave an impetus to their culture which continued to increase until the Japanese varieties were introduced from Japan by Mr. Fortune. Long before these weird varieties came, however, Samuel Broom had made the Chrysanthemum a popular flower, and the exhibitions he inaugurated in the classical old Temple Gardens are still continued to the present day. Popular, however, as the Chrysanthemum may have been in times past, it is now more admired than ever, and yet we think the cultivation of this flower is at present only in its infancy, for should we succeed in the next decade in procuring as superior varieties over those of to-day as the ones of the present age are over those of ten years ago, it would be interesting to see the change. The finest varieties of the present day are raised from seed, and as the raising of seedlings is said to be the "poetry of gardening," we are sure it will be continued with increased success each year. During the past five or six years there has been produced by the Chrysanthemum specialists of the United States the greater portion of the most popular varieties grown to-day, and American florists now exceed all others in the

cultivation of this plant, and it is with pride we point to the many excellent ones raised by them within the past few years. The climate of the Southern States is in every way adapted to their proper development, and the ladies of the South who by their diligent care have for so long made their gardens bright with the Hyacinth and Rose, and sweet with the Magnolia and Jassamine, should now take up the culture of the "Autumn Queen." It is into their hands we would fain trust our favorite. They can find but few other garden flowers more valuable, and still fewer that may be fairly called everybody's plant. It is well fitted for the cottage garden, for a sunny corner behind the porch, as well as for the marble-floored conservatory. Every cottager and artisan may grow it to perfection with but little expense, and it will prove a more agreeable companion in Fall, than the Narcissus, the Crocus or Hyacinth of Spring,

That comes before the swallows dares  
And takes the winds of March with beauty.

Spring flowers come like a joyous prelude of a concert, but the Chrysanthemum like the closing strains of a parting song. We would like to see the ladies of the South excel in the culture of this plant, as the climatic advantages are much more favorable to it here. To say that this "flower of Autumn" has a great future before it is but to repeat one of the most palpable truisms of our time. It is only last year that a National Chrysanthemum Society was formed in this country, with Mr. John Thorpe, an enthusiast in its culture, as President. So great is the interest at present, that some such a tribunal as this had to be established to give the seal of endorsement to all that is worthy among the numerous aspirants that spring from the rank and file of the great army of



Earl of Beaconsfield.

seedlings that annually comes marching on; also to veto the spurious sorts from commerce with as much vigilance as the national government excludes their original cultivators from our shores. It has been customary in England for generations past to hold large displays every Autumn of this favorite flower, and handsome and valuable prizes are offered each year for the best grown plants and the finest cut blooms; so much so, that it is immensely popular over there, and thousands flock to see these displays each season with as much avidity as a Kentucian would a State fair or race meeting. The people on this side of the Atlantic have now fully caught on and Chrysanthemum shows are now all the fashion. Each year brings the news of exhibitions of these plants being held in cities for the first time, and once inaugurated, they grow and become more attractive each year. The shows now held in New York, Boston, Philadelphia, Chicago, Indianapolis and Cincinnati, compare favorably with any of the great exhibitions of the Old World. We are also glad to note that many of the Southern cities are falling into line, and the "Autumn Queen" is given a well appointed reception each season as they open in all their beauty, with the ripening of the golden orange in the soft sunny days of our Indian Summer. Nashville, Memphis and Clarksville, Tenn., Charleston, S. C., Atlanta and Macon, Ga., Dallas, Texas, and many other cities, have their annual displays, and we trust ere long every city in the South will have its display, as these displays are indicative of good taste, and where this is so inherent among all who love flowers in the South, we cannot have to wait long for this attainment. The public has a desire to see the best the gardeners and florists can do in this line, and it is only by means of these displays that this can be accomplished, as well as extending the

taste and enlarging the demand for them. Any one that has ever seen a real *Chrysanthemum* show will need no further invitation than merely the announcement of time and place, and to those who have never seen a *Chrysanthemum* show we say, by all means avail yourself of the first opportunity to see one and you will never regret it. Do not think because your grandmother had a few varieties in her garden many years ago, that you know all about them, and you can imagine what it would be like. If you do you will never be more mistaken; the varieties of ten years ago are no more a comparison with the fantastic Japanese types of to-day than a *Magnolia* bloom is to the *Daisy—Burns'* "we crimson tipped flower." When going to a display, above all do not forget the children; children have a natural love for plants and flowers, and nothing can give them more lasting pleasure and happiness than to cultivate this love of theirs, until they and the flowers are fast friends and inseparable companions.

When nuts are dropping from the trees and corn is gathered in,  
 When purple grapes are on the vine and apples in the bin,  
 When far across the level fields is borne the crow's harsh call.  
 Then in the garden lifts its head the bravest flower of all.  
 Oh! bright and strong and undismayed, the bravest flower of all,  
 Far on Winter's icy edge it sets its banner bold,  
 With fragrance keen as myrrh and spice, with colors clean and  
 cold.

Its petals may be tipped with pink, or touched with palest hue  
 Of yellow gold, or snowy white—their beauty smiles at you;  
 And little reck's it, though the frost may chill the nipping air,  
 It came to see the curtain drop, this flower so debonair.

—MARGARET E. SANGSTER.

### CLASSIFICATION OF THE CHRYSANTHEMUM.

Having no more agreeable class of plants to experiment with, the hybridisers have worked much improvement



in the *Chrysanthemum*, as it responds with great freedom to the requirements of the skillful hybridiser, and the different classes have been so crossed and intermixed that many of them have lost their identity, but regained some trait of beauty in some novel form that still claim admiration from all interested in its development. The chief classes among the *Chrysanthemum* to-day are as follows:

#### CHINESE.

This is the oldest type of *Chrysanthemums* in existence, and divided into two distinct classes, viz: Incurved and Reflexed. This entire class is characterized by compact flowers with closely fitting petals like the *Aster*, and are admired by many to the present day for their bright colors and the uniformity of their blooms. The plants are mostly of excellent habit of growth, and good for specimens. In the class of incurved varieties, as the name implies, all the petals curve towards the centre of the bloom, and sometimes many varieties presents the appearance of a ball or globular form. The petals are strap shaped, and with the inward curve only the back of the florets are seen in the most perfect blooms. The best examples of this class are *Empress of India*, *Lady Slade*, *Duchess of Manchester*, and *Golden Empress*. The reflexed varieties in this class differ only in the outward curve of the petals, so that the inner surface of it is all that is to be seen, and in many cases the outward row of petals reflex back so much as to touch the flower stalk, so that in this case also a ball or globular shape is attained. The inner face of the petals being fully exposed in all reflexed varieties, it naturally follows that the varieties of this group are most remarkable for their vivid coloring. The best examples in this class are *Cullingfordii*, *Dr. Sharp*, *Christine*, *Annie Salter* and *Progne*.



M. Tarin.

## JAPANESE.

This class is of the most recent introduction, and contains all the most beautiful sorts in cultivation. It is to the Chrysanthemum what the Teas are to the Rose family, and was introduced from Japan into England by Mr. Robert Fortune, to whom we are indebted for many of the finest plants in cultivation to-day. So singular were these in shape and color, from all the reputed standards of perfection at that time, that they barely escaped total neglect, and consequent extinction. At the present day, however, these once neglected kinds stand in the first rank as decorative plants, and are vastly more popular, and more deservedly so, than any other group among Chrysanthemums, and each season sees some great improvement, so that the form of the flower has become so beautiful that it seems scarcely possible to still further improve it, and yet each season brings us a surprise in the form of some improvement over existing varieties. Last season the variety, Mrs. Alpheus Hardy, caused wonder everywhere exhibited. It is a beautiful white variety, while the petals are covered with delicate fine hairs that gives it a unique appearance so different from anything ever before known among Chrysanthemums. Lilian B. Bird is also another variety that is largely sought after. It is a beautiful color described as a shrimp pink; each petal is a complete tube, and has the appearance of so many beautiful little straws of irregular lengths that renders it a variety of the most beautiful and interesting kind. Mrs. Carnegie also was very popular last season, and is a beautiful variety of deep crimson color. The Bride is the best white up to the present day in this class. The characteristics of all in this class is their loose and irregular form of their

blooms, twisted and crimped, revolute and thread-like, with forms so diversified and colors so numerous as to be unlike all other flowers, and have no comparison with any other class of flowering plants in existence. The varieties in this class are so numerous, and all so truly beautiful, that we would not be doing justice to many of the attractive sorts by naming a few as good representatives of this class. We will instead give the names of some of the varieties that were awarded first prize at Indianapolis last November, and as the Indianapolis Chrysanthemum display is now second to none in the United States, some estimation may be formed of their beauty: Lilian B. Bird, Mrs. Irving Clark, L'Canning, Miss Esmeralde, Lucrece, Kioto, Mr. George Bullock, La. Triumphant, Duchess, Mrs. Carnagie, Mrs. Langtry, and G. F. Moseman.

#### POMPONE.

This class was also introduced from an island on the east coast of China, where it was found, and was called the Chusan Daisy. It was a reddish or small light brown Chrysanthemum. After its introduction into England it was propagated by the Horticultural Society of London and sent out among its members. From some of these members it was sent to M. Lebois, a perfect enthusiast in Chrysanthemum culture in Paris. He succeeded in seeding it and raised a number of good varieties that afterwards got into the hands of Mr. Salter, a well known English cultivator of the Chrysanthemum, who still further improved it and raised many beautiful sorts. This is the accepted history of the Pompone. They are all small, compact blooms, and are favorites with many on account of their neat growing habit and free blooming qualities. The French growers gave them this name,

Pompone, from the resemblance of the flower to the tuft or pompon on the soldiers caps. The best in this class are Snowdrop, Bob, Golden Cedo, Nulli, Mademoiselle Martha, and La Desire.

#### ANEMONE FLOWERED.

The varieties of this race have an outer circle of strap shaped petals, with a large raised disk in the centre of the flower that shows out prominently, cushion like, and made up with closely arranged tubular florets. Some of the varieties are of very odd and attractive formation, as in Fabias de Maderanaz, whose outer petals hang gracefully around the bloom, and has a named effect. The best in this class are King of Anemonies, Louis Bonamay, Gluck, Agnes Hamilton, George Sand, Lily Burgess and Edna Craig.

#### SWEET SCENTED CHRYSANTHEMUMS.

There has been several varieties in cultivation that were noticeable on account of their perfume, such as Progne, Dr. Sharp and Lord Derby, but it was not until last season, with the introduction of that deliciously perfumed variety *Nymphæa*, that this class claimed much attention in regard to their fragrance. The flowers are of the purest white, about two inches in diameter, and have somewhat the form and fragrance of the well known Pond Lily; being borne individually on long stems, they are extremely valuable for cut flowers, while their delicate perfume and chaste character make them desirable for the finest floral work.

#### SINGLE FLOWERED.

This class is freely produced from seed, and many of the varieties are very pretty. They have one, two or more rows of petals that surround a yellow disc, and





Lady St. Clair.

from their graceful form were very fashionable a year or two ago; even yet they have many admirers, but have not attracted the universal attention it was thought they would some few years since, when some of our prominent florists raised them in quantities from seed each season. It was thought they would have a run like Single Dahlias and other flowers of this description, that seem to have hosts of admirers. The best known Single Chrysanthemums grown to-day are Othello, Juliet, Iago, Hamlet, Crimson and Gold, and America.

#### TUBULAR PETALLED.

This is not really a class in itself, but a sub-division of the Japanese family; all are curious and beautiful. They are most interesting on account of their quilled or tube shaped petals. Some of them are produced in regular formation, like Glorie Rayonnante, and some twisted, as in President Arthur and Lilian B. Bird. Tubiflorum and Mrs. Cleveland are prominent in this class.

#### ANNUAL CHRYSANTHEMUMS.

There are several of these varieties with white, yellow and purple flowers that are produced easily from seed, and deserve a place in the flower garden. *Chrysanthemum Frutescens* is the "Marguerite" of the Paris gardens, and has for the past several years been exclusively used for bouquets by the florists of New York and other large cities, but since the flower is a Daisy, the fashion has about now all died out. The ox-eyed Daisy of the field has also been used for that purpose. There is now a yellow flowered variety of *Chrysanthemum Frutescens* called the "Golden Marguerite."

Said the Lily to the Rose one day :

"What do you think of it, neighbor, say ?

The flower there with the big yellow eye  
 And little white lashes that wink so spry"  
 The Rose spoke up quite loftily, said she,  
 "The gardener calls it a French Daisy,"

"Aha!" said the Marigold; "oho!" said the Pink,  
 "What are we coming to? My!—just think!  
 The ladies all wear it and exclaim 'how sweet!'  
 Some call it a Daisy and some Marguerite."  
 Quick spoke the Touch-Me-Not—"French is it, hey?  
 Halloo! little Daisy—parlez vous Francais?"

"Ahem!" said the Hollyhock clearing his throat,  
 "On this fine French Daisy the ladies may dote.  
 With due respect for the opinion of the Rose,  
 Pray excuse me if I hold my old-fashioned nose;  
 But when I was young it grew round the kennel,  
 My grandmother called it 'that horrid Dog Fennel,'"

—BETTIE GARLAND.

#### VARIETIES IN PRESENT CULTIVATION.

It is somewhat amusing at the present day to look over a few of the works written some years back upon the Chrysanthemum by English and other writers, to see the varieties there enumerated as the finest in their respective classes. With some slight exceptions there is not one of them that would stand the muster roll among the great army of American raised seedlings of the present day. So great has the improvement been within the past few years, that most all the varieties of ten years ago are now relegated to the shade, and are only to be found in old-fashioned gardens, where they are cherished for what they have been, and not for any remarkable beauty they at present possess. In view of this it is with hesitation we give a list of the best varieties of the present time, lest future chroniclers should deride us for our choice of to-day. However if in the next decade the sorts here enumerated will be as far behind the ones of that period, as those of a dozen years ago are behind the

varieties of to-day, we will be so elated at the triumphal march that the Autumn Queen herself would not receive a benediction of the rains of heaven with more delight, than we would our derision if coming from such a cause. The following lists are selected with much care, and will be found most suitable for the purpose named, and embrace all the best and newest to date. A wide experience and knowledge of all the varieties in current cultivation enables us to guarantee the propriety of this claim. Forty-eight of the best varieties for specimen plants or garden decoration :

Cullingfordii .....	Red.
Madame C. Audiguier.....	Pink.
Mrs. Frank Thompson.....	Pink,
Domination .....	White.
Duchess.....	Red.
Le Tonkin.....	Pink.
Lord Byron.....	Bronze.
Mrs. Bullock.....	White.
Mrs. Heale .....	Blush White.
Montplaisant.....	Crimson.
M. Boyer.....	Pink.
October Beauty.....	Blush.
Puritan.....	Blush.
Pelican.....	White.
Mrs. Robert Elliott.....	Yellow.
Grandiflorum .....	Yellow.
John Thorpe.....	Amaranth.
Jean d'Arc.....	Blush.
Gloriosum.....	Yellow.
Mrs. John Wanamaker.....	Lilac.
Gold .....	Yellow.
R. Crawford, Jr.....	Pink.
Peter the Great.....	Yellow.
La Triomphant.....	Rose.
Lord Mayor.....	Violet.
Lambeth.....	White.
Louis Weille.....	Mauve.
Robert Bottomley.....	White.

Venus.....	Blush.
William Robinson.....	Golden Bronze.
William M. Singerly.....	Purple.
Leopard.....	Spotted.
W. W. Coles.....	Red.
Troubadour.....	Pink.
Nymphæa.....	White.
Lucretia.....	Cream.
Mrs. Carnagle.....	Red.
Lilian B. Bird.....	Pink.
Empress of India.....	White.
L'Canning.....	White.
Mrs. Langtry.....	White.
Mrs. Vannaman.....	Red.
Mrs. J. C. Price.....	Yellow.
Lady Matheson.....	Cream White.
Little Tycoon.....	Rose.
Ben d'Or.....	Yellow.
Judge Rea.....	Pink.
The Bride.....	White.

Forty-eight of the best Japanese varieties, suitable for exhibition flowers:

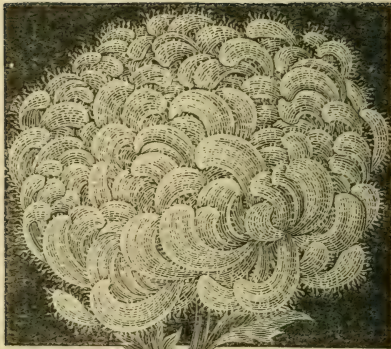
Baronne de Prailly.....	Pink.
J. Delaux.....	Crimson.
Boule d'Or.....	Yellow.
Comte de Germiny.....	Bronze.
Mrs. C. H. Wheeler.....	Orange Red.
Madame C. Audiguer.....	Pink.
Domination.....	White.
Mrs. Frank Thompson.....	Pink.
G. F. Moseman.....	Terra Cotta.
George Maclure.....	Amaranth.
Grandiflorum.....	Yellow.
Gloriosum.....	Yellow.
John Thorpe.....	Amaranth.
Mrs. J. N. Gerard.....	Pink.
Mrs. A. Waterer.....	White.
J. Mahood.....	Yellow.
La Triomphante.....	Rose.
Le Dauphinois.....	Chrome.
Le Tonkin.....	Pink.



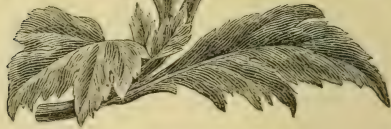
Mrs. Langtry.....	White.
Lord Byron.....	Bronze.
Mrs. George Bullock.....	White.
Magnet.....	Pink.
Martha Harding.....	Old Gold.
Phœbus.....	Yellow.
Pelican.....	White.
Public Ledger.....	Pearl Pink.
President Arthur.....	Pink.
R. Broklebank.....	Yellow.
R. Crawford, Jr.....	Pink.
Syringa.....	Peach.
Thomas Cartledge.....	Buff.
Charles Pratt.....	Claret.
Soliel Levant.....	Yellow.
Lady Lawrence.....	White.
Troubadour.....	Pink.
Mrs. T. H. Spaulding.....	White.
W. W. Coles.....	Red.
William Robinson.....	Golden Bronze.
H. Cannell.....	Yellow.
Mrs. Carnagie.....	Red.
Mrs. A. Hardy.....	White.
Lilian B. Bird.....	Pink.
President Spaulding.....	Red.
Little Tycoon.....	Rose.
Jessica.....	White.
Mrs. J. B. Wilson.....	Light.
The Bride.....	White.

Twenty-four of the best Japanese varieties, suitable for exhibition blooms:

Comte de Germiny.....	Bronze.
Mrs. C. H. Wheeler.....	Orange Red.
Domination.....	White.
Mrs. Frank Thompson.....	Pink.
G. F. Moseman.....	Terra Cotta.
Grandiflorum.....	Yellow.
La Triomphant.....	Rose.
Mrs. Langtry.....	White.
Le Tonkin.....	Pink.
Lord Byron.....	Bronze.



A. BLANC.



Mrs. Alpheus Hardy.

Phœbus.....	Yellow.
President Arthur.....	Pink.
Robert Bottomley.....	White.
Thomas Cartledge.....	Buff.
J. Delaux.....	Crimson.
William Robinson.....	Golden Bronze.
Soleil Levant.....	Yellow.
R. Brocklebank.....	Yellow.
The Bride.....	White.
Mrs. Carnagie.....	Red.
President Spaulding.....	Red.
Mrs. J. B. Wilson.....	White.
Lilian B. Bird.....	Pink.
Little Tycoon.....	Rose.

Twenty-four of the best varieties for bush plants—suitable for exhibition or home decoration :

Cullingfordii.....	Red.
Grandiflorum.....	Yellow.
Jean d'Arc.....	Blush.
Mrs. John Wanamaker.....	Lilac.
Gold.....	Yellow.
R. Crawford, Jr.....	Pink.
Lord Byron.....	Bronze.
Montplaisant.....	Crimson.
M. Boyer.....	Pink.
Puritan.....	Blush.
Mrs. Langtry.....	White.
Robert Bottomley.....	White.
Venus.....	Blush.
William Robinson.....	Golden Bronze.
William M. Singerly.....	Purple.
Mrs. Robert Elliott.....	Yellow.
Mrs. Alpheus Hardy.....	White.
Mrs. Carnagie.....	Red.
The Bride.....	White.
La Triumphant.....	Rose.
Empress of India.....	White.
Gloriosum.....	Yellow.
Mrs. Vannaman.....	Red.
Judge Rea.....	Pink.

Twenty-four of the best Chinese varieties suitable for exhibition blooms:

Alfred Salter.....	Rose Pink.
Bronze Jardin des Plantes.....	Bronze.
Bronze Queen of England.....	Bronze.
Cullingfordii.....	Red.
Empress of India.....	White.
Emily Dale.....	Yellow.
Miss E. A. Jacquith.....	Bronze.
Golden Empress.....	Yellow.
Golden Queen of England.....	Yellow.
Jardin des Plantes.....	Yellow.
Jean d'Arc.....	White.
John Salter.....	Bronze.
Mrs. John Wanamaker.....	Lilac.
Lord Wolseley.....	Bronze Red.
Lady Carey.....	Rose.
Mrs. M. Morgan.....	Light Pink.
Mrs. Heale.....	Blush White.
M. Brunlees.....	Indian Red.
Mabel Ward.....	Yellow.
Nil Desperandum.....	Orange.
Lady Slade.....	Pink.
Prince Alfred.....	Crimson.
Princess Teck.....	White Blush.
Sir S. Carey.....	Amaranth.

Twelve of the best varieties for bush plants—suitable for exhibition or conservatory decoration:

Cullingfordii.....	Red.
Grandiflorum.....	Yellow.
Mrs. John Wanamaker.....	Lilac.
Gold.....	Yellow.
M. Boyer.....	Pink.
Puritan.....	Blush.
Mrs. Robert Elliott.....	Yellow.
Mrs. Langtry.....	White.
Nympha.....	White.
Montgolifer.....	Bronze.
Mrs. Carnagie.....	Red.
Lady St. Clair.....	White.

Twelve of the best Japanese varieties suitable for exhibition blooms :

Comte de Germiny.....	Bronze.
E. Molyneux.....	Crimson.
G. F. Moseman.....	Terra Cotta.
Grandiflorum.....	Yellow.
Mrs. Langtry.....	White.
Phœbus.....	Yellow.
J. Delaux.....	Crimson.
Robert Bottomley.....	White.
The Bride.....	White.
Mrs. J. B. Wilson.....	White.
Mrs. Carnagle.....	Red.
President Arthur.....	Pink.

Twelve of the best varieties suitable for growing as Standards :

Comte de Germiny.....	Bronze.
Duchess.....	Red.
Mrs. Frank Thompson.....	Pink,
G. F. Moseman.....	Terra Cotta.
Gold.....	Yellow.
Jean d'Arc.....	Blush.
Grandiflorum.....	Yellow.
R. Crawford, Jr.....	Pink.
Robert Bottomley.....	White.
Mrs. J. B. Wilson.....	White.
Mrs. Carnagle.....	Red.
Madame C. Audiguier.....	Pink.

Twelve of the best Anemone-flowered varieties suitable for exhibition blooms :

Eva.....	Salmon.
Empress.....	Lilac.
George Sand.....	Bronze.
Mrs. Judge Benedict.....	White.
Lividia.....	Blush.
M. B. Pigmy.....	Rose.
Nouvelle Alveole.....	Pink.
Gladys Spaulding.....	Bronze.





Mrs. Carnegie.

Thorpe, Jr.....	Yellow.
Mrs. Charles Pratt.....	White.
Fabias de Maderanaz.....	Lilac.
Soeur Souille.....	Blush White.

Twelve of the best Chinese varieties suitable for exhibition blooms :

Bronze Queen of England.....	Bronze.
Cullingfordii.....	Red.
Empress of India.....	White.
Emily Dale.....	Yellow.
Jean d'Arc.....	Blush.
Jardin des Plantes.....	Yellow.
Mrs. John Wanamaker.....	Lilac.
Lord Wolseley.....	Bronze Red.
Mrs. Heale.....	Blush White.
Prince Alfred.....	Crimson.
Princess Teck.....	Violet Blush.
M. Brunlees.....	Indian Red.

#### CHRYSANTHEMUM CULTURE.

Few plants will exist under as much neglect as a Chrysanthemum, and yet there is none more capable of being so highly developed than this now all popular plant. Out of the hundreds, probably thousands, of ladies and others that grow Chrysanthemums, only a very small proportion of them give them the proper treatment. In most cases after they set their plants out in the Spring, nothing further than a little working and weeding, and perchance a stake to keep them off the ground, is about the sum and total of the cultivation they receive. With such treatment as this you may get a very showy plant in the Fall that to a majority of people would appear very pretty, but good flowers or handsome plants can never be attained in this way. It is not many years since it was said that the Chrysanthemum would not do well in the South, but our experience and the experience of others at various points throughout the entire South have

completely refuted all that has been said in that direction. We believe on the contrary that the climate of the South is especially suited to its cultivation.

#### SELECTION OF PLANTS.

In early Spring secure nice healthy young plants in a fresh growing condition. Avoid those that are rather large and have a hard woody stem. These are plants that were rooted in November and December and got stunted through the Winter, and on this account will not make a vigorous growth, and are apt to rust and become unhealthy long before the Summer is over. Better far secure a nice growing plant with soft wood and in a healthy condition, if well rooted no matter how small, for it will soon grow off with much vigor, and if properly cared for, will retain it all the Summer and look rich and luxuriant when the large wooded plants before mentioned look stunted and less vigorous. We grow all our large specimen plants from cuttings rooted in February and March. We give elsewhere a list of the different varieties best suited for a special object of culture.

#### PREPARATION OF SOIL.

After selecting your plants, choose a nice open spot where they will have sunshine each day. Make the soil rich to a depth of at least eighteen inches with cow manure, and a little bone dust if at hand. If the soil has a tendency to be stiff or clayey, add a little sand to keep it porous, as the *Chrysanthemum* delights in a rich and rather light soil. Set the plants carefully out, taking care that the roots are moist and in no way suffering for want of water. As soon as your plants begin to grow, place a nice stake to each one. Allow only one shoot to grow, and when this has attained the height of about

eighteen inches, nip the top off with the finger and thumb. Do not nip it down too far, just only the centre bud is all you want to remove. This will cause it to emit side branches, all of which must be removed from the lower part of the stem, and by no means let any come up from the roots. These must be cut away as soon as they appear from the surface of the ground up to say about twelve inches of the main stem. No shoots must be allowed to come. All above this must be encouraged, and as they grow out must be nipped off at the end, as you did the main shoot, always having due regard for the shape and proportions of your plants.

#### PRUNING AND STAKING.

Through the early Summer months, when they are growing rapidly, this nipping will need attention every week or ten days, and by a close observation of these rules you will have a nice shaped plant on one stem to reward you for your attention. Be careful as the plant gets larger to add more stakes to keep it from breaking off at the joints, as Chrysanthemums grown in this way are very liable to snap off at the joints from the least cause. The neatest way is to put one strong stake in the centre and loop the different branches up to it, using a separate string for each shoot, and not pass the string entirely around the plant and tie it, as you would a sheaf of wheat, as is frequently done. This manner keeps the branches too close, and the air cannot circulate freely enough through them to induce their proper development.

#### WATERING AND MULCHING.

At all times during the Summer keep the ground around the plant nicely worked, never allowing the ground to become baked. Water always in dry weather.



Anemone.



This is best accomplished by making a little basin with soil around the stem of the plant to prevent the water from running away when poured on, and cause it to soak in directly over the roots, where it will do the most good. In dry weather a little mulching of grass or litter of any kind thrown over the roots will prevent them from drying out so rapidly. After the first week in August all pinching and cutting must be discontinued, except any that comes from the roots or lower part of the stem; to allow these would spoil the appearance of the plant. Early in September the buds on many of the varieties will be beginning to form. At this time a watering of liquid manure should be given about twice a week, or say every alternate watering when the weather is such that watering is necessary. This is best made by placing about one-half a wheelbarrowful of cow manure in a barrel and filling up with water. Stir it up and let it rest for a few minutes before using. Water may be added occasionally, but the manure will last a couple of weeks.

#### THINNING THE BUDS.

As soon as the buds commence to form they must be closely watched, and when about as large as peas, every bud but the one on the extreme top or end of the shoot must be removed. Just rub them off with the finger and thumb, and carefully preserve the end or terminal bud; this is where large flowers are required. It seems a great waste of the blooms to do this, but do it once and you will never regret it. One large flower attracts more attention in a display than a thousand small or medium sized ones. By this mode of treatment we had flowers that measured from eight to ten inches in diameter on a number of our plants that astonished all who saw them. It is best to cut away all the weak shoots and not let them

flower at all. Select only the strongest shoots; leave only one bud on the end of each shoot; keep an eye on them occasionally, as little buds will keep coming lower down the shoot that must be removed. With this treatment, if large flowering varieties are selected, there will be no trouble in having blooms from seven to ten inches across, and a plant grown in this way with only a dozen blooms on it, is more showy and more attractive in every way than six of the best varieties you can secure grown, or rather let grow, in their own spontaneous way. During the period the buds are swelling give them plenty of liquid manure, but as soon as the blooms begin to expand, give them clear water. After the blooms are fully expanded, if shaded from bright sun they will last a much longer period. The culture in pots can be carried on exactly as the foregoing rules state; the same applies to both pot and open ground culture. When grown in pots they will have to be shifted into larger pots from time to time, as the growth of the plant demands it, and must be potted into the pots they are intended to bloom in not later than the first week in July, and not afterwards disturbed at the roots. Keep the pots plunged or sunk in the ground up to the rim of the pot, as this keeps them from becoming dry so rapidly, and greatly adds to the health of the plant, as when grown in pots they are more liable to suffer from want of water, and consequently need more care than if they were planted in the open ground.

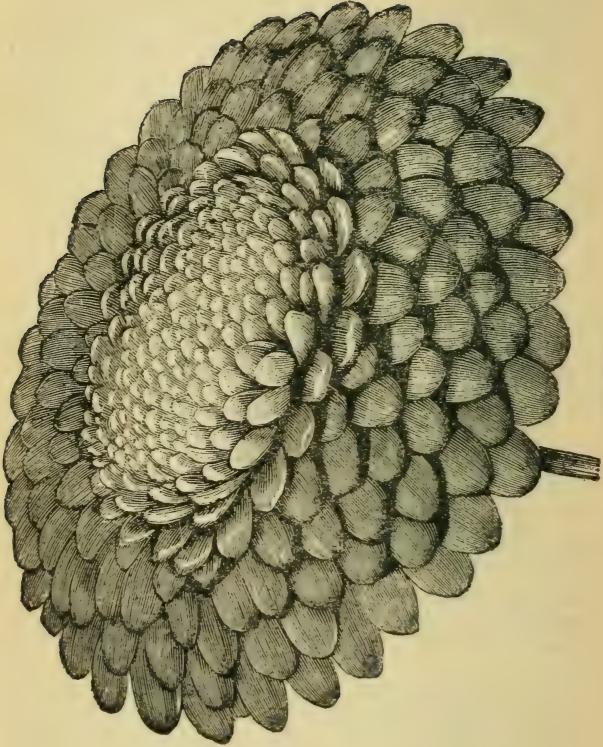
#### POTTING.

When the plants are grown in the ground all the Summer and taken up and potted in the Fall for house or conservatory decoration, the transferring of them into pots is a critical period. This is best accomplished by the middle of September or October 1st, if the weather is

cloudy and favorable. Plants intended for potting should be cut around from eight to ten inches from the stem with a sharp spade or knife, running the implement into the ground to a depth of about fourteen inches all around the plant; this cuts off all the rambling roots and induces the ones inside the circle to grow more dense and make a complete mass of roots, and if the above cutting is attended to about once a week for two or three weeks before potting, when the time comes to pot your plants will lift up with a nice ball of roots and suffer little or no check in the operation. After potting have a tub of water at hand and stand them in it for about twenty minutes, with the water above the top of the pot. After this remove to the shade and keep them there a few days, gradually inuring them to the sun. If they show a tendency to wilt, keep in shade a few days longer, and keep the foliage moist by frequent sprinklings.

#### STANDARD CHRYSANTHEMUMS.

Standard Chrysanthemums is the trade name for plants grown on a single stem to about the height of thirty or thirty-six inches, with a nice round head of bloom on top. To grow them in this way needs more attention and skill than in any of the other ways. A proper selection of varieties best adapted for this purpose is of all importance, which we give elsewhere. The directions before given apply to these in same manner, only instead of nipping the top off at eighteen inches, the desired height of thirty or thirty-six inches, as the case may be must be attained before the top is pinched off. To attain this height of the single stem, all side shoots must be carefully watched and rubbed off as quick as they appear, also any shoots that show a tendency to start from the roots, allowing only the one straight stem to grow, which



Cullingfordii.

must have a good stake to protect it and keep it straight. When the desired height is attained, pinch the top off and treat the new shoots that come from the sides as before directed, and allow none to come out on main stem for say thirty inches above the ground. If your main stem has not attained thirty-six inches in height before pinching, of course shoots must be allowed to come out a little lower down, so as to form a good head. In growing Standards they must be kept in pots all the time, that is where they are wanted for conservatory or room decoration in the Fall, as there would be danger of loosing them when transplanting to pots after all their growth was made in open ground. In the far South, where they remain out all the time, it is not necessary to keep them in pots, but may be grown to Standards in the open ground with the same care as the other *Chrysanthemums*.

#### SAVING SEED.

The seed bearing plants should be grown in pots, and somewhat small, for convenience in handling and storing; the blossoms should be the largest and most perfect, and all inferior flowers removed. The plants, while in flower, should be kept in a dry, airy, sunny greenhouse or window, and they should be well established, even to pot-bound, in their pots to quicken their inclination to bear seeds. As soon as the flowers selected for seed bearing are in full bloom, clip off the flower leaves with a pair of shears, but not so short as to injure or touch the stamens or pistils. This allows ready access for wind or insects to assist in fertilizing the flowers, also for the use of the camel's-hair brush in hand-fertilizing them. In bright, sunny weather, and where bees and other flower-haunting insects abound, a good crop of seed may be had by their assistance; but, for all the time and trouble it



takes, it is advisable to hand-fertilize the flowers, using a fine brush, and in the forenoon, and especially in bright, sunny weather. From the time of fertilizing the flowers till the seed is ripe, is generally six to eight weeks.

#### PROPAGATION BY SEED.

The seeds should be sown in pots or boxes in the windows or greenhouses early in Spring, so as to have good blooming plants next Fall. They germinate readily, and in a temperature of 60°, in seven to nine days. Soon after they come up, prick them off into other pots, pans, or boxes, to prevent them damping off, and when they begin to grow strong, shift them into other boxes or singly into pots, for, in order to have vigorous plants, it is necessary to keep them in thrifty growth till blooming time. When big enough, plant them out and afterwards treat them as you would plants raised from cuttings.

#### THE PLEASURES OF RAISING SEEDLINGS.

There is a particular charm in raising *Chrysanthemums* from seeds; every seed will germinate; every seedling, if sown early in Spring, will become a blooming plant next Fall, and no matter what kind of flowers the seedlings may produce, we are sure of a clean, thrifty growth, and a profusion of blossoms never surpassed in any other way. And the enthusiast will be delighted to watch the progress and development of the plants, for no two—no matter how many there may be—are alike, even in foliage, and the same distinction shall be observable in the flowers.

#### THE FLOWERS.

Among these we shall get single, double, and semi-double; Japanese, Chinese, Anemone and Pompon, and other forms; white, yellow, chestnut, bronze, purple,

crimson, and their different shades of color; and large and small, good and not-so-good flowers in their several classes. And we always are apt to get something better of its kind than anything before now known. During the past year first-class seedlings have sold at \$25.00 and upward a plant; \$1,200 was even offered for the seedling Mrs. Carnegie, and refused. The stock of Mrs. Alpheus Hardy sold for \$1,500.

#### INSECTS AND DISEASES.

The Chrysanthemum being hardy and robust in constitution is singularly free from disease. When they are housed or sheltered in November, mildew sometimes makes its appearance. This is caused by cold nights succeeding sunny days, or two great extremes of temperature. Over-crowding the plants and insufficient ventilation is another fertile cause of mildew. It must never be forgotten that it is shelter not heat the Chrysanthemum wants, that is in sections where it does not stay out the entire Winter. Should mildew actually appear, dusting the affected plants with powdered or flowers of sulphur is the best antidote, together with the maintenance of a dry atmosphere. The Black Fly or Aphis is the worst enemy the Chrysanthemum has to contend with; it infests the little plants in the early Spring, and will stick to them all the Summer long if not destroyed. This is closely allied to the Green Fly or Aphis that infests the Rose, and the same treatment will destroy it. A good decoction of tobacco water applied by means of a syringe or wisk broom, will make the plant so distasteful to them that they will soon forsake it. Soap suds from the laundry applied in the same way as the tobacco water, will also help to drive them away. In sections where tobacco stems can be procured cheaply, if they are



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Lillian B. Bird.

kept sprinkled among the plants the insects will never molest them. If you have a water supply and a garden hose, and give your plants a good syringing each evening, it will also make it unpleasant for the bugs, and the chances are they will not want to stay on your plants any great length of time. If grown indoors, a smoking as recommended for Roses will kill them. In the Fall a sort of a brown catterpillar preys upon them; there is no antidote for this better than the finger and thumb system of picking them off and destroying them.

#### TO RETARD THE BLOOMING SEASON.

During recent years the Chrysanthemum has become so essential for all early Winter decorations, that various cultural practices have been devised and resorted to in order to obtain dwarf bushy plants, as also to induce a later habit of blooming, so that, instead of having a glut of flowers all at one time, there should be a gradual succession from late in October until late in January—that is to say, during the most dreary period of our floral year. Wherever decorative bushes are required, a portion of the collection should be treated as follows: Early in May, when the plants are eighteen inches or two feet in height, cut back the whole of the shoots to within one foot or six inches of the pot. This causes the plants to break out fresh and bushy, and also throws back the plants, so that they bloom later than would otherwise have been the case. Cut a few plants down in succession from May until the end of June. We have seen some plants last season cut down in June, that made nice bushy plants, covered with fresh flowers early in January, or nearly six weeks after others not so treated had bloomed. These plants were cut off level with the pot tops, and were kept moist only until new growths appeared. It must be

borne in mind that the practice is not recommended except in the case of decorative bushes, as the individual blooms are not so large and are produced later on plants so treated. But there is a dwarf free-flowering freshness about plants so grown. It is a plan to be especially recommended in the culture of flowering bushes for conservatory and greenhouse decoration.

### HINTS ON EXHIBITING.

Intending exhibitors must be extremely careful "to read, mark, learn, and carefully digest," the words and meaning of the schedule or regulations of the exhibition or society offering prizes. If the slightest doubt is felt call upon or write to the Secretary of the exhibition and get a clear idea of what is meant, or disappointment may result, owing to your having unconsciously shown in the wrong class, or you might be disqualified for showing clusters of flowers where individual blooms were expected, or showing bush plants where plants grown on one stem were to be exhibited. Be sure everything is especially understood, and if your plants or flowers have to be sent any distance, make judicious calculations that you get them there on the time required by the promoters of the exhibition. In the transportation of specimen plants the stakes should be drawn together by means of a stout string, as they travel more safely and are less liable to be broken when tied in this manner. As soon as your plants reach the exhibition hall, the stakes may be pressed back to their original position, which they will retain by pressing the dirt firmly around the base of the stakes. The shipping of cut flowers to exhibition points is always attended with anxiety and to arrive in perfect condition requires great care. Those having boxes made expressly for the purpose do not require to be prompted, but the



amateur or those who are beginners and have not complete outfits will do well to take the following hints: All flowers should be cut and placed in water at least twenty-four hours before shipping. Flowers that are opening too quickly should be cut, if even a week before the time, with long stems, placed in a cool dark shed or cellar where the atmosphere is dry. A piece of the stem should be cut off about every third day and the water changed. In packing wrap each flower carefully in tissue paper just tight enough not to bruise. They should then be placed in either boxes or baskets in tiers so that they do not press on each other. In boxes strips should be nailed far enough apart so as to allow the flowers not to chafe, the stems to be held in place with other strips, using damp paper as a packing between each layer of stems. The same method to be carried out in basket packing, except that strong string is to be used instead of wood strips. Do not allow the petals to become wet during packing. In staging the flowers all those with long and drooping petals will require to be gently shaken before placing in position, remembering always to make a new surface at the end of each stem by cutting a piece off before placing in water on staging. Labeling should be legibly and neatly done, placing the names conveniently in front of each flower. As to the arrangement of the flowers, the larger flowers should be at the back, the smaller ones to form the front rows.

#### TREATMENT AFTER BLOOMING.

When the flowers are over, cut back the main stem so as to leave only one or two small side shoots, that have formed by that time. These are left to keep the sap flowing until shoots spring from the roots. These shoots from the base of the plant form the cuttings that make



the plant for the next season, and can be easily propagated any time through the Winter months. January, February and March are best for this operation. When you cut back the stems, if grown in pots, don't remove the stakes, or if you do be careful to fill up the holes they were in with soil, as the water would pass through the holes and the plant might perish for want of it. Liquid manure may now be given at intervals again, so as to induce them to throw up good healthy cuttings. Where extra fine plants are desired, thin out the cuttings as they start from the pot or surface of the soil around the base of the plant. This gives you less of them, but they will be much finer and stronger, and will ultimately make the best plants. The young cuttings will root freely in a pit or greenhouse, or in an improvised frame made with a window sash, as recommended for Roses, if either of the foregoing are not at hand. They need shading from bright sunshine until they form roots, and must never be allowed to suffer from dryness of the atmosphere or the material they are planted in. It is not necessary to have pure sand for the propagation of the *Chrysanthemum*; about one inch of sand on top of any ordinary compost of soil will suit them admirably. As soon as rooted put into small pots, and gradually into larger ones as required. South of this point they may be planted out in the garden where required as soon as they are sufficiently rooted in the cutting bed. Young plants raised this way every year are superior to old plants kept over. Try one old plant and a young one side by side one season, and thereafter you will never keep an old *Chrysanthemum* a second year, painful as it may be to see old age thus cast aside to make room for a younger and more vigorous generation. If the old plants should by any means be kept over to flower the

second season, they should be lifted and divided in the Spring, the small pieces thus planted being nearly equivalent to young plants. Never keep them longer than one year without dividing, if you still wish to preserve the old stock. Give them good rich ground, and keep them staked and watered as before directed for young plants.



## CHAPTER III.

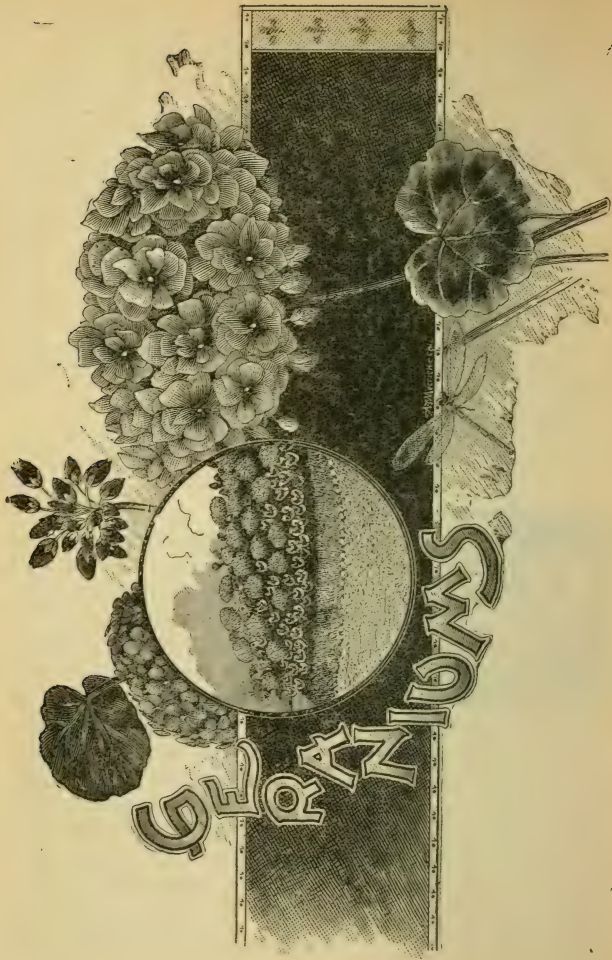
# GERANIUMS.

Bright flower! whose home is everywhere,  
Bold in maternal Nature's care,  
And all the long year through the heir  
Of joy or sorrow;  
Methinks that there abides in thee  
Some concord with humanity,  
Given to no other flower I see  
The forest through!



**B**YOND all comparison the Geranium as it is commonly called is the best known and most popular of any plant in cultivation to-day among all nations of the globe. Properly speaking, at least technically so, the Geranium is an extensive species of herbaceous plants, all of which are hardy in the South, and known as "Crane's Bill," from the beak like thorns or projection beyond the seed. A few of the species produce handsome flowers, while most of them are mere weeds. What the general public know as Geraniums are correctly known as Pelargoniums of the Horse Shoe or Zonale type, and also called Fish Geraniums, therefore it is to this class our remarks must be confined, which is also an extensive genus of evergreen perennial flowering





SWAZI

plants. They are mostly natives of the Cape of Good Hope, a few occur in Australia, one in the Canary Islands and one in Asia Minor. The greater number of kinds grown are hybrids, which are produced with great facility in this genus. So much so that few of the old sorts of ten years ago are recognized among the general lists of this class of plants at the present day, and we believe with the exception of the Chrysanthemum, no other class has underwent such great improvement within the past few years. The French seem to excel in the production of the finest sorts, as the names of hundreds of the handsomest varieties to be found at present will indicate. Some English raisers, notably Pearson of Chilwell, Nottingham, Cannell of Swanley, Kent, and Turner of Slough, London, have introduced many important additions to this class. There has also been a number of beautiful varieties raised by American florists, but the bulk of all the most desirable sorts are imported. There are few cultivated plants that make a more beautiful display when they receive the care and attention they need. They stand the hot sun of the South better than any other class of Summer flowering plants, and produce more flowers, making a better display than anything else that could be grown on a similar space. Its easy propagation renders it one of the cheapest of plants, and is consequently found under many different circumstances. It helps to embellish the boudoir of wealth in a peach blow vase, as well as adorn the toilet of the modest village maiden, but in either case it loses nothing of its inherent beauty, and thrives equally well regardless the fact that either prosperity or adversity may dwell within its shade. For large beds on lawns, in parks or in private or public places, nothing can be more effective than a large bed of bright scarlet Geraniums. The varieties of

more delicate colors are not so well adapted for massing or planting on a large scale as the bright colors of the most vigorous growing sorts, nor near as effective. The more delicate colored varieties make excellent pot plants where parties wish to grow them for window or house decoration, and when thus grown are at all times admirable objects about a home, whether on the porch in Summer or in the pit in Winter.

### VARIETIES OF PELARGONIUMS.

#### LADY WASHINGTON.

The Fancy or Show Pelargoniums are strictly for the greenhouse or pit, and unsuitable for the garden or flower border. A new hybrid was raised in 1794 and called Lady Washington, and on this account until the present day this entire class is known as "Lady Washington Geraniums." Some divisions of this class have also the distinctive appellations of Fancy, Large Flowered, Spotted, and French Pelargoniums. As specimen plants for the conservatory they have no equal during their blooming period; the beautiful markings of the blooms vie with many a costly Orchid in richness of color and shading. They usually bloom in the Spring months and last for a period of from four to six weeks in great perfection; after this their beauty has departed until another season, as they do not bloom but once in the year, and on this account are not popular in the South, for we are in most respects like the scores of good housewives all through the country, that send their orders in the Spring to the florists with the strict injunction to send something "that will blossom always," and since Lady Washington is not of that sort, and her beauty so transitory, she claims no great admiration from either the amateur or professional florist of the South.

## ZONALE OR HORSE SHOE PELARGONIUMS.

This class is also called Fish Geraniums, and comprises all that is beautiful in this entire class of plants. They are single and double, and run the entire gamut of color from the purest white to the richest velvety crimson. This species has a splendid habit of being dwarf and compact, with good form and substance. It has large reniform, indistinctly zoned leaves, soft to the touch, and exhaling when rubbed an aromatic odor. Some of the varieties of this class have a dark zone on the surface of the leaf, hence the term horseshoe. There are such an innumerable number of varieties in this class that we will not mention one in preference to another, as they all possess decided charms.

## SILVER LEAVED AND TRICOLORS.

The flowers in this class are all single and of a prevailing pink, light scarlet or rose color, the beauty of the foliage being produced at the expense of the flower. They retain the same characteristics as the Horse Shoe or Zonale class, only the markings are more vivid, as in Mountain of Snow, where the leaves are beautifully margined with white, Marshal McMahon, with a yellow ground and a bronze zone, and Happy Thought, with a creamy yellow leaf and broad margin of deep green. The Tricolors are still more highly marked, as in Mrs. Pollock, Lady Cullum and Sophia Dumaresque; the foliage of these are all most attractive, but are of weak growth and do not stand the sun of our Summers in the South, and unless as objects of interest for the greenhouse, window garden or pit, are not much raised with us here.

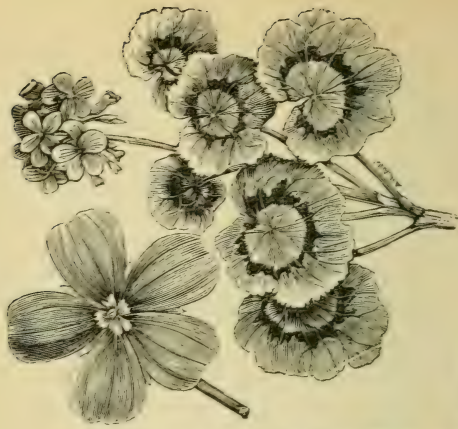


White Geranium:



## SCENTED GERANIUMS. ·

This is a most desirable class and decidedly popular, for nearly every lady in the South that has flowers at all has her "Rose Geranium," her Apple Scented, Nutmeg, and Pennyroyal. There is none in this class of any great beauty except Madame Taylor, which has a pretty scarlet flower, together with all the other attributes of the Rose Geranium; also Lady Plymouth, among the variegated class, is a pretty old variety that we claim a life time acquaintance with. With some few exceptions like these the beauty of flower and foliage alike has all been sacrificed to the exquisite perfume of the leaves. The Oak Leaved, the Lemon, the Balm, the Nutmeg, the Pennyroyal, the Citron, the Apple and many others belong to this class. All are desirable on account of their perfume, and are much grown all through the South, their leaves being indispensable in bouquet making and cut flower decorations. They are all freely raised from cuttings except the Apple Scented variety; this cannot be successfully raised from cuttings, and young plants are most easily produced from seed. They require more care than any other in this class, do not like to be disturbed much or handled around like other plants, and if left alone in a quiet corner of the greenhouse or pit, providing it has plenty of root room, it will grow and flower freely and produce seed in abundance. This is most popular in the South, and more highly prized than any of the other Scented varieties, and since it cannot be freely raised from cuttings like most of the other sorts, it is always a little more expensive. In fact many of the Northern florists do not grow it at all, and is only to be found in Southern gardens or among the collections of Northern florists who do a large business in the Southern States.



Tricolor Geraniums.

## IVY LEAVED.

There are many varieties that come under this heading, all of which are beautiful sorts that grow rapidly and flower freely. From their graceful trailing habit they are much used for window gardening and rustic work. Many of them have handsome double flowers, while the general class has single blossoms of much beauty, the petals being beautifully marked and blotched as in the Lady Washington class. They are easily raised from cuttings and luxuriate under the same treatment as others of this family.

## CULTURE AND PROPAGATION.

Since the Geranium is the life long companion of every family where civilization is known, its habits and character is familiar to all, and its propagation is universally understood. Every woman knows how to grow it from cuttings and care for it through the inclement periods of our Winters. Each one has her own particular system in which she is eminently successful, and is always free to impart her knowledge to a neighbor or anyone else interested in flowers. While the Geranium will flourish in almost any nature of soil, provided it is properly worked and fertilized, we find it thrives best in a rich light mould. Equal parts of sandy loam and well decayed manure, with a little leaf mold and sand. They propagate most easily in Spring and Fall, and at all times during the Winter months in pits or greenhouses, and can be grown to very large size where desired. In the old country conservatories it is most common to find Geraniums from six to eight feet high, grown on a single stem, with a fine head of branches on top that flower abundantly. These are called Standards and are grown with the same care and treatment as previously given

for Standard Chrysanthemums. Large plants of this kind are grown in comparatively small pots by occasionally cutting them back and removing the soil from the roots, at the same time taking off the large and most luxuriant leaves, and potting again in small pots with fresh soil. This gives them new vigor and they start and grow beautifully soon after having been thus treated. Any time your large pot grown Geraniums do not show signs of active growth and the leaves become yellow, just shake every particle of soil from the roots, cut back the top some, and remove most of the leaves. Cut the roots back a little also, and put them in a pot with nice fresh soil, and with the usual care it will surprise you. Geraniums may be taken up in the Fall and Wintered in the cellar or any place where they will have some light and frost cannot reach them. In this case they will need no water through the Winter, as dampness is far more fatal to them than a dry atmosphere, and all signs of decaying leaves and stems must be removed as quick as it appears. In removing the decaying leaves always pull them downwards, as then you entirely remove it, and it comes off with much more ease and does not disturb the plant as if pulled upwards. Where growing close together in a pit or greenhouse in Winter, it is always a good plan to remove most of the large leaves so as to allow the air to more freely circulate among them, and not to give them a drawn and spindling appearance which they otherwise would have. The young shoots propagate best cut off about three or four inches from the end. With most varieties cutting them off just below the third joint from the end makes the most desirable sized cutting; in weaker growing and close jointed sorts, five or six joints may be left. The leaves had all better be cut off, as the cutting could not sustain them, and they would even-

tually damp or rot off, and might possibly injure the cutting in so doing. Another advantage of removing the leaves is that you can get more of them in a pot or box or on the cutting bench without the leaves than with them, and the air gets more freely among the cuttings, which prevents their damping off until they attain roots and become self-supporting. A pot or box of sand, or a frame made out of doors in the Fall, will do admirably to root them in. We always use sand to propagate them in, as it does not retain the moisture as long as ordinary soil, and on this account they are less liable to damp off in sand than if soil was used. A good watering after the cuttings are put in to firm the sand around them and wash it properly into place, is about all the treatment necessary until they are rooted. As soon as rooted they should be potted into small pots and grown on as desired. If the cuttings are put in during the Fall, care must be taken to get them in soon enough to be rooted before cold weather, so that they can be potted up and removed to safer quarters with the approach of frost, as they will not stand any degree of freezing without some injury.

#### ENEMIES AND DISEASES.

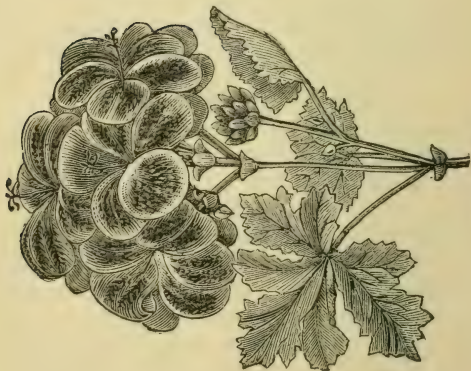
The Geranium survives in happy immunity from all kinds of disease, and though so infinitely less in proportion, is as healthy as the forest oak. Its only foe is dampness or over moisture in the greenhouse or pit through the Winter months. By watering only when the plants really need it will help to avert this trouble, and a careful removal of all decaying leaves as fast as they appear. Where plants are kept in a pit without fire heat, but very little water will be necessary through the Winter months, in fact it is a little better to err in having them a little too dry than too wet. In mild





Double Geranium.

A BLANC



Madame Taylor.

weather all the ventilation possible may be given, as a free circulation of air among them will greatly check all damping off that may appear. A sort of a brownish caterpillar sometimes attacks the foliage when growing outdoors in the Fall, and sometimes finds its way into the pit or greenhouse in Winter. There is no other way of getting rid of these than picking them off and destroying them, as they are never very numerous. This will be very quickly done with a little watchfulness for a few days after they appear.

Tell me oh! lovely Pinks what is it around you clinging?  
Sweet spices from far off lands forgotten memories bringing.





Carnations.

## CHAPTER IV.

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# CARNATIONS.

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ANY think the Carnation, next to Roses and Chrysanthemums, is the most popular flower we have. It is indigenous to Britain, where it is sometimes found in a wild state. It is found growing plentifully on the Southern sides of the Swiss Alps, and in many portions of the mountainous regions of Italy. In these countries it has long been cultivated and highly esteemed, although it does not appear to have been known to the ancients. In England it is cultivated to a great extent, but there only as a garden flower. With us in the United States it holds an important position, and we believe there are more Carnations propagated and grown in the United States one year than there is in all other countries put together. Hundreds of thousands are continually being raised, and cut blooms of Carnations can be bought by the thousand in any of our large flower markets from January to December. Its chief use with commercial florists is for Winter blooming. Large areas of glass are devoted to its culture in all the cut flower establishments of the North, and next to the Rose as a Winter blooming plant it has no superior. The stateli-

ness and profusion of its growth, the brilliancy and diversity of its colors, and sweetness of its perfume, never fail to attract admiration. Hogg says: "Of all the flowers that adorn the garden, whether they charm the eye with their beauty, or regale the sense of smelling by their fragrance, this may justly be said to hold the first rank." They are all hardy South of this point, though in many cases a light covering of leaves or evergreen boughs would be beneficial to them through December and January. They bloom most when grown out doors in the South in September, October and November. At this season a bed of Carnations is a grand sight. To procure a bed of this sort select young plants in March or April; no matter how small they are, as long as they are healthy and have good roots, for large plants are ones that have been blooming through the Winter and are comparatively worthless. The soil should be quite rich and well manured with thoroughly rotted manure, or if not to be had, bone dust may be used to a good advantage. The plants should be set out about eight inches apart each way, and as they grow they should be stopped, that is when the shoots of growth become six inches long, they should have the points pinched out. This should be continued until the middle of July, when the operation must be discontinued if flowers are desired early in Fall. As most of the foot stalks of Carnation blooms are not strong enough to bear the weight of the blooms, a stake must be put to each plant and the different flower stalks looped up to it by means of a fine string or matting, which is better. Some of the varieties have but one flower on the end of the flower stalks, others have their buds produced in clusters, so that in gathering the blooms only short stems can be secured unless at a great sacrifice of buds. The long stemmed varieties



always command better prices in the cut flower market but do not produce as many blooms to the plant as the other varieties. In a fine Carnation the stem must be strong, tall and straight; the footstalks supporting the flower should be strong, elastic, and of a proportionate length. The corolla should be at least two inches in diameter, consisting of a great number of well formed petals, but neither so many as to give it a full and crowded appearance, nor so few as to make it appear too thin and empty. The petals should be long, broad and substantial, particularly those on the lower or outer circle, commonly called guard leaves. These should rise perpendicularly about half an inch above the calyx, and then turn off gracefully in a horizontal direction, supporting the interior petals, and altogether forming a convex and nearly hemispherical corolla. The interior petals should rather decrease in size as they approach the centre of the flower, which should be well filled with them. The calyx should be at least one inch in length, terminating with broad points sufficiently strong to hold the narrow bases of the petals in a close and circular body without bursting. Varieties with a weak calyx that easily burst are not desirable.

My lady comes tripping lightly  
 Adown the garden walks,  
 Swinging her garden seissors,  
 (We tremble on our stalks,)  
 Saying "what shall I wear to-night?  
     Here's a Rose,  
     There are Pinks,  
     Lilies too;"  
 She stops and thinks!  
 Were ever eyes so clear and bright?  
 "Which of all does he like best?"  
 She softly smiles and sings;

"Here are Roses and Lilies too,  
 And the Pink with its perfumed wings;  
 He loves the Pinks!"—she leans and lingers;  
     Then clip! clip!  
     Ah such gems,  
     And over our  
     Grey green stems,  
 She clasps her supple fingers.

She places us on her warm white breast,  
     We forgive her cruel clipping;  
 Alas! a rude step hasteneth,  
     To steal the love we are sipping,  
 To wear the flower he loveth best;  
     He comes!  
     And stands,  
     Then takes  
     Her hands!  
 The curtain falls—you know the rest.

ENVOY.

He clasped her to his strong young breast,  
     She no more stops and thinks;  
 Two hearts are beating tenderly,  
     But where are the perfumed Pinks?  
     —BETTIE GARLAND, Clarksville, Tenn.

PROPAGATION.

The Carnation is propagated by layering, by cuttings and by seed, but cuttings is the most preferable way in the South. To produce new varieties, the saving of seed and cross fertilization must be strictly attended to. The seed freely germinates, and young plants will bloom when about one year old. The layering process can be done in either Fall or Spring, and is a safe but rather slow process. Bend the shoot to the ground and at a joint, say from four to six inches from the top, trim all the leaves off, and right on the joint, with a sharp knife, cut it about half in two; by means of a hooked peg, fasten this to the ground, right where the incision is made, a hand-

ful of soil placed upon it, so that the cutting will be completely enveloped with soil at the point where it is cut, to give it a chance to more freely emit roots. The cut checks the flow of sap to the extreme end of the cutting, and on this account it roots more freely. When treated this way they will root in from six weeks to two months, when they can be detached from the parent plant and set out wherever desired. For amateurs and others not growing them in quantities, this is a good safe way, but for the commercial florist, or any one wishing to raise them in quantities, the propagation by cuttings is most suitable to this end. Good strong cuttings must be selected, as the weak and spindling side growths do not make satisfactory plants. The cuttings should be from three to four inches long, and have a few of the leaves stripped or rather cut off at the base or lower end of the cutting; all the other leaves may be shortened so that the cuttings may be planted close together to save room in the propagation bed or boxes, whichever the case may be. They root best in sharp sand, and with a nice even temperature and a shading from the bright sun, will soon root, when they may be potted up and grown on as desired.

#### FOR WINTER BLOOMING.

These should be planted out in Spring and grown and pinched through the Summer, as recommended previously, until about the middle of September, when they may be carefully lifted and potted or planted out on the benches in your pit or greenhouse; for several days after this operation is performed they must be kept shaded and sprinkled. If this is carefully attended to they soon recover from their removing and begin to bloom right away. They do not like much heat, and if grown in too

warm a house they soon get unhealthy and become of no use; a temperature of from 45° to 50° suit them best.

### VARIETIES OF CARNATIONS.

There are numerous classes and varieties among the Carnations, but space will not permit us to go into all of them in a small book of this sort. The technical name of the Carnation is *Dianthus*, and to this many species belong. The old garden Sweet William, *Dianthus Barbatus*, belongs to this class; also *Dianthus Hortenses*, the common garden Pink, that is in perfection in May; the foliage is more grass like and hardier than the clove Pink or Carnation proper. These are also classed as Flakes, Bizarres, and Picotees. Flakes have two colors only and the stripes are large, going quite through the petals. Bizarres are variegated in irregular spots and stripes, with not less than three colors. Picotees have a white ground, spotted or pounced with scarlet, red, purple, or other color.



## CHAPTER V.

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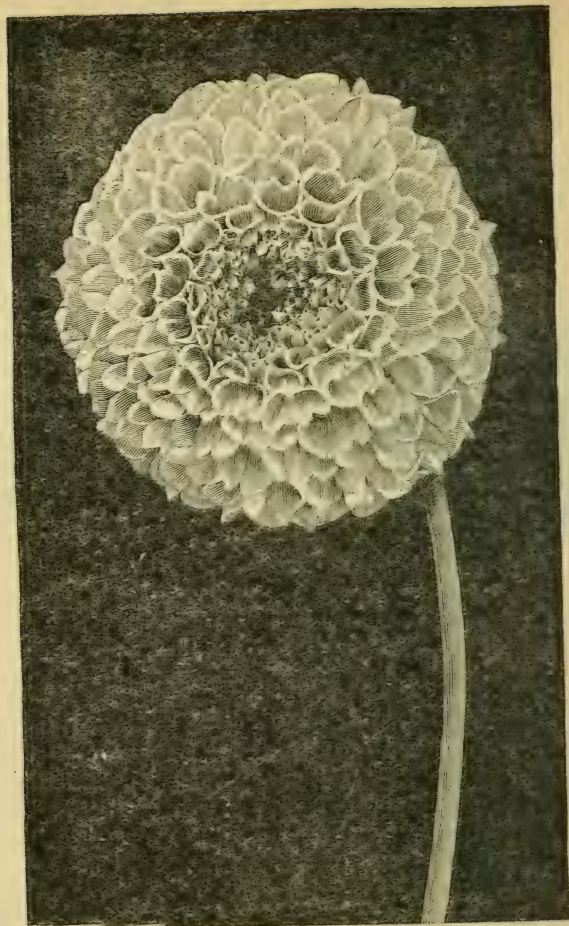
# THE DAHLIA.

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THE DAHLIA is a native of Mexico, where Baron Humboldt found it growing in sandy meadows several hundred feet above the level of the sea. It was brought to England in 1789, but was neglected and the genus lost. It ornamented the royal gardens of the Escorial, at Madrid, for several years before Spanish jealousy would permit it to be introduced into other countries of Europe. It derives its name from a countryman of the celebrated Linnæus, Prof. Andrew Dahl, a Swedish botanist; he presented it in 1804 to Lady Holland, who was its first successful English cultivator. Cavanilles, of the Botanical Garden, Madrid, sent a plant of it the same year to the Marchioness of Bute, who was very fond of flowers, and who kept it in the greenhouse. From this species nearly all the varieties known in the gardens have been raised, as it seeds freely, and varies very much when raised from seed. Among all the colors, however, displayed by these varieties, no flowers have yet appeared of blue, and are not likely ever to be, as we find no family of plants in nature





White Dove.

in which there are blue, yellow and scarlet in varieties of the same species. Two species and their varieties were the only Dahlias known to English gardens for many years, as, though a few kinds were introduced from time to time from France and Spain, yet, as they did not hybridize with the others, and were rather more tender, they were not generally cultivated, and appear to have been soon lost. Most of these have, however, been reintroduced from Mexico, with several new species, within the last few years, and there are now ten or twelve distinct species, besides innumerable varieties of *Dahlia Variabilis*. The most remarkable of the new species is the tree Dahlia, *Dahlia Excelsa*, which is said to grow in Mexico thirty feet high, with a trunk thick in proportion. The Dahlia is the grandest Autumn flower we have. Nothing is its equal in any respect in September and October. It is in its glory when everything else is fading, and surrenders only to the Frost King. The long late Fall in the South is especially suited to its culture, as it is at that season it attains its greatest perfection. Our Dahlias here in October make such a gorgeous display that we wish the Fall might last forever, and in the more Southern States, where frost keeps away much longer, the season of their enjoyment is so great that they are most popular and very extensively grown. *Dahlia Imperialis*, a distinct species, attains a height of ten to fifteen feet, and is of a fine branching form, producing late in the Fall, pure white, drooping, lily-like flowers, three inches in diameter. It flowers rather late, but it is a magnificent plant in any section of the country where frost holds off until the 15th of November. A new section has been introduced in England with single flowers, that make distinct and interesting bedding plants, as they flower in great profusion. The flowers so



Single Dahlias.

far attained are scarlet, yellow, rose, and crimson, making a fine contrast with the yellow disk.

### PROPAGATION.

The propagation of the Dahlia is quite simple. For amateurs, division of the root will more than supply their needs, as each will divide, if started in a hot bed or any warm and moist place, into good plants. For the trade it is propagated generally by cuttings taken off early in January, and grown on in pots, with few shiftings, until time to plant out in the border. To succeed well they should have a strong, deep, and rich soil; as they are rapid growers, they are consequently gross feeders. For perfection in bloom, the side branches should be kept cut, allowing but a few at the top; this will give but few flowers, though of superior quality. The roots should be stored during Winter in a dry, warm cellar, and covered with sand. This, however, will not be necessary South of this point. A better plan is to cover the roots or tubers where they are growing in the ground with straw or litter of some kind upon the approach of cold weather, and unless you wish to transplant and divide, they will grow on undisturbed for years in the same place, but it is better to divide and replant occasionally. With a climate like this of the Southern States, the Dahlia may be said to be at home, and it is one of the plants that pretty nearly takes care of itself. A careful staking to prevent the winds from breaking off the branches is an important item in its culture. It is not necessary in making a new planting to set them out early; just soon enough to get a good start before the warm weather sets in. If planted out too soon they frequently grow too straggly, and do not make as nice

plants in the Fall, when they are to be most admired, as plants set out later in the season.

#### VARIETIES.

The Dahlia is divided into five distinct classes, namely, the ordinary or Show Dahlia, with large, perfect, double blossoms; the Pompone or Bouquet, with small, perfect flowers; the Dwarf or Bedding Dahlia, making a small, compact bush, not more than eighteen inches high, but with flowers of full size; the Single Dahlia, which is at present rather popular, and is very desirable for cutting, and the Cactus Dahlia, one of the most admired of the lot, which has long petals curiously twisted at the points, and resemble somewhat the flowers of a Cactus.

#### ENEMIES OF THE DAHLIA.

The Dahlia is another plant that is free from disease; it is such a robust grower that it may be said to be disease proof. In England it is very much subject to attacks from the ear-wigs that eat holes in the stems and otherwise destroy the blooms. We are not troubled much with them in the South, but occasionally some few appear. They are easily caught by placing a small piece of moss in a flower pot and fixing it bottom end up somewhere among the branches of the plant. After they are through with their night's destruction, they will invariably take refuge in the inverted flower pot for the day, as it affords them a convenient hiding place. The pots should be examined each day, and the ear-wigs thrown into a pail of water to keep them from running away, and afterwards destroyed.



## CHAPTER VI.

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# THE LILY.

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Innocence, bride of man's childhood,  
Innocence, chi'd beloved, is a guest from the world of the blest—  
Beautiful ; and in her hand a Lily.



LILIES and Roses ! What an exquisite combination of grandeur and chaste beauty ! The Rose that has for ages been the all acknowledged Queen of Flowers, has her reign disputed only by the Queen Lily. Here in this genial climate, where the Summer zephyrs are oftentimes laden with their fragrance, we are induced to look upon them both as sister sovereigns of the floral world. The Rose, the emblem of this terrene dominion of material existence ; the Lily, of a spiritual habitation of purity and surpassing loveliness. And though the Rose may still be Queen, the Lily is always a favorite, as it was in the most remote ages where it was, and is to the present day, immortalized by poets and painters as typical of purity and beauty. This genus contains over twenty species of the most beautiful of flowers, and no plants are capable of being cultivated in the Southern garden that possess so many charms ; rich and varied in color, stately in habit, profuse in variety,



"Consider the Lilies."

and of delicious fragrance, they stand pre-eminently out from all other bulbous flowering plants. The name is from a Celtic word, signifying whiteness. It is found in all the temperate regions of the Northern hemisphere, in many of its distinct and beautiful groups. A few only are found in sub-tropical Asia. California has also furnished several, while we have in most of the Southern States many really fine indigenous sorts; for instance, what lady in the South that grows flowers is not familiar with the *Paneratium* or Spider Lily? From the banks of the Nile and the Amazon we get two most beautiful sorts. Japan has furnished by far the greater number of really excellent sorts, and to China we give due credit for the "Sacred Lily." How sacred! and what a Lily! The *Lilium Candidum* is the oldest known species and comes from the Levant. Siberia furnishes the beautiful *Lilium Tenuifolium*, and Bermuda the well known variety of that name, known in the commerce of to-day, and with the exception of the Calla Lily and Lily of the Valley, is most popular at the present time. A remarkable feature in this class of plants is that it has no inferior varieties among it, in fact the Lily has no poor relation, and antiquated as many of the sorts may be, they are all eagerly sought after to-day. The *Ricardia*, known also by the sobriquet of "Calla Lily" and "Lily of the Nile," is one of the most widely known plants in cultivation. It is as old fashioned as a last year's bonnet, but is never retrimmed or yet cast aside, and continues to grow on in its own peculiar beauty from season to season, regardless the vagaries of dame fashion, and yet is invariably in attendance at the marriage ceremony, the reception and the banquet—a true case of the survival of the fittest. The genus has an unlimited number of varieties, and each subdivision is equally numerous, so that we will

only attempt to name but a few of the most prominent groups.

#### LILIUM CANDIDUM.

This is the white Lily, very common in most of the Southern gardens. It is entirely hardy, has a large scaly bulb, a leafy stem from three to four feet high, terminating in large pure white flowers on peduncles. It flowers in this section in May. It is a native of the Levant, and can be propagated by offsets or little bulblets; even the scales broken off and inserted in a properly prepared bed will produce young plants. When growing for some time in the same place undisturbed, a single bulb will get to be a large clump, which may be taken up in the Fall and divided if necessary; as this season is best for planting. There are several other varieties of this class.

#### LILIUM AURATUM.

This is also called the Gold Banded Lily, and is the most magnificent member of the genus, a flower whose beauties no pen can describe. It is a native of Japan. The flowers are from ten to twelve inches and even more in diameter, beautifully spotted with reddish crimson, a beautiful band of golden yellow running down the centre of each petal in most of the plants, though in some of the varieties the band is chocolate colored, in others crimson. In addition to these beauties of coloring, the flowers are deliciously fragrant, and one bloom will perfume an entire pit or greenhouse. They do well in the South, and are most popular, being entirely hardy. The best season to plant them is the Fall, although they may be put out in Spring. They usually bloom in July and August, and bulbs planted in Fall will be stronger and have finer blooms than those set out in Spring. It can also be grown in pots to advantage, if wished for room or

greenhouse decoration, and is always a favorite wherever seen. It is a plant that every person, rich or poor, should have in their garden.

#### LILIUM LONGIFLORUM.

This species is entirely hardy all through the South and very much admired, and is frequently cultivated in pots for greenhouse decoration. The flowers are trumpet shaped, pure white and deliciously sweet. It is a native of Nepal. There are several varieties of Longiflorum. The noted *Lilium Harrissii* belongs to this class, and is at present the most desirable of Lilies on account of its forcing qualities. By potting the newly imported bulbs that come from Bermuda (where it is extensively grown) in August, with proper care and a desired temperature they can be had in bloom in December and January. Usually they come into bloom in March or April, and generally at Easter time, hence the name Easter Lily; it is also known as Ascension Lily.

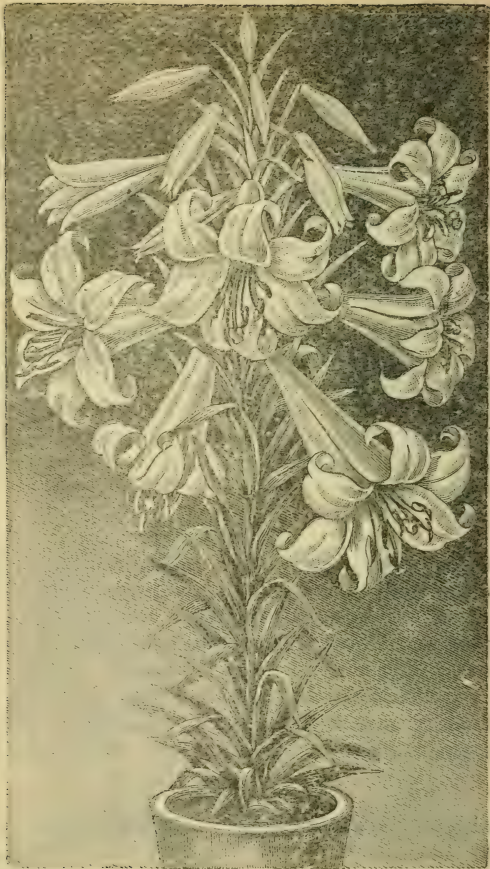
#### LILIUM GIGANTEUM.

As its name implies, this is a gigantic Lily. It grows, when the bulb is strong, to about eight feet in height, with a very stout stem, and large cordate shining dark green leaves. The large flowers are produced in terminal racemes, and are pendent and trumpet shaped, white with reddish violet streaks, and very fragrant. It is occasionally met with in the South, and ought to be more generally grown. It is a native of Northern India.

#### LILIUM JAPONICUM.

In this species the flower stems usually attain the height of eighteen inches or two feet, and bear large fragrant white trumpet shaped flowers, which have the mid-ribs of the lobes tinged with purple. It is a lovely Autumn





Lilium Harrissii.

flowering kind, often seen in gardens in the South, and is deservedly popular. Native of Japan.

#### LILIUM SPECIOSUM.

There are several varieties of this class, namely, Grandiflora, Rubrum, Allium and Punctatum, all of which are fine for pot culture or can be grown in the open garden with fine results, where they generally flower in July and August. With the exception of the variety Album, most of the other sorts are handsomely spotted with crimson or pink, and form most desirable plants for the flower garden or cemetery plot, or anywhere that fragrance and beauty is desired.

#### LILIUM THUNBERGIANUM.

A dwarf species, seldom exceeding a foot or a foot and a half in height; leaves ovate-lanceolate, dark green; flowers large, spreading, of a rich bright orange color; it blooms during July and August. Though not nearly as stately in growth as most of the others in this class, it is a very pretty variety.

#### LILIUM WALLICHIANUM.

This species which is entirely hardy makes a beautiful plant. The leaves are long and narrow, almost linear towards the top, which is a distinguishing character from its near ally, *Lilium Longiflorum*. The flowers are white, with a long narrow tube, and a limb nearly eight inches across; it is very fragrant, and grows from three to four feet high, producing from one to three flowers on each stem in August. Native of Northern India.

#### LILIUM WASHINGTONIANUM.

An extremely beautiful species. It is fine and robust growing, the leaves being verticillate, and the flowers

large and trumpet shaped; they measure some eight or nine inches across; the color is white, beautifully tinged with lilac purple, and deliciously fragrant. Add to this the fact that some twelve or eighteen flowers are borne upon a stem, and we have said enough to enlist the interest of all plant growers. It comes from the Western slopes of the Californian Sierra Nevada.

#### ORANGE LILY.

This showy flower has a scaly bulb, a leafy stem, sometimes about two and a half feet high, terminating in orange colored flowers. Sometimes the stem produces small green bulbs in the axils of the leaves. There are several varieties of this species and all are showy. They are readily propagated by offsets.

#### LILIUM MARTAGON.

This is usually called the Turk's Cap Lily; has also a scaly bulb, a stalk furnished with narrow leaves about three feet high, with terminating penducles of fine carmine flowers that usually bloom in June. There are also other varieties of this Lily, and it is easily propagated by offsets or little bulblets.

#### LILIUM TIGRINUM.

Called also Tiger Lily. This is similar in growth to the Martagon, with the upper leaves cordate, oval, and petals spotted. It is very plentiful in the South.

#### LILIUM SUPERBUM.

This is as beautiful and rich as many of our native Lilies are, and far excels them all, bearing as it does a pyramid of yellowish red flowers, twenty to fifty in number; blooms early in July, and in good soil it will frequently grow to the height of eight feet.

## LILIUM TENUIFOLIUM.

One of the most charming of all Lilies; no words can adequately describe the elegant appearance of the flower and foliage. The wax-like petals are beautifully reflexed, the dazzling vermilion flowers suspended fairy-like on graceful stems above and among the glossy, narrow foliage, are simply exquisite. They are so bright that they attract attention at a great distance, and blooming in early Spring enliven the surroundings when flowers are scarce. The bulbs are perfectly hardy and grow very easily. Plant them in a loose sandy soil, avoiding a place where water stands during the Winter.

## DAY LILY.

The Funkia, called the "Day Lily," is a very superb Autumn flower, very desirable for planting on the side of a lawn or at the edge of shrubbery. It will increase in size and beauty every year. The plant has very showy foliage, prettily veined. Flowers are of various shades, from pure white to dark blue.

## PROPAGATION.

To here enumerate all in the class of Liliiums would give this little volume too much the appearance of a bulb catalogue, only the price is not added, consequently we will not enumerate any further, and only state that many beautiful varieties are omitted from the list. All the foregoing are most commonly propagated by offset bulbs, but new varieties may also be raised from seed. The seedling bulbs flower in from three to five years. All Lilies delight in a rich light soil, such as is afforded by a mixture of loam and well rotted manure. One uniform treatment is applicable under all cases to this entire species. All may be grown together in the border and



Amaryllis.



remain undisturbed for years, frequent removals being injurious by destroying the roots. All of them thrive best when planted in partial shade. If grown in pots after the flowering period is over they should be allowed to dry off by gradually withholding water, and afterwards turning them on the sides and letting them rest for a few months in this manner. After this they may be shook out and repotted, or planted out in the garden, as it is best not to cultivate the same bulbs in pots two years in succession.

### AMARYLLIS.

These are bulbous plants, mostly natives of the Cape of Good Hope and South America, but which have been increased in number tenfold by hybrids and varieties raised in England and on the Continent. All the kinds are eminently ornamental, and they are all easy of culture, the great secret being to give them alternately a season of excitement and a season of repose. To do this effectually, the plants should be abundantly supplied with water and heat, and water should be withheld from them by degrees when they are done flowering, till they have entirely ceased growing, when they should be kept quite dry and in a state of rest. When in this state they may be placed in any obscure part of a greenhouse where it is dry. If kept in such a situation during Winter, some kinds may be turned out into a warm border in the Spring, where they will flower; and if the season be fine, they will renew their bulbs in time to be taken up before the approach of frost. The chief value of these plants, however, is to produce flowers in the Winter season, which they readily do if they are kept dry and dormant during the latter part of the Summer and Autumn. Indeed, by having a large stock of these bulbs, a regular

succession of flowers may be produced during every month in the year. When the dormant bulbs are intended to be thrown into bloom, they should be potted in sandy loam and leaf mold, and put in a warm place, kept rather dry, and covered with leaves until the pots are filled with roots, when they may be exposed to the light and allowed to grow on, with an increase of temperature if possible. In most portions of the South they are entirely hardy, and can be grown in the open ground without much care. It is only where they are needed for pot or greenhouse decoration that they should be grown in pots. The writer had charge for several years of the finest private collection of *Amaryllis* in England, at Storrs, Windermere. A number of handsome greenhouses especially erected for their culture were continually attractive by the new seedlings as they from time to time burst into bloom, besides hundreds of the finest varieties of other raisers that money could procure. Numbers of handsome varieties were raised every year and the stock was always held as a private treasure, that no amount of money could buy. A variety of a few dozen plants named Storrs' Beauty had frequent offers of five and seven thousand dollars, all of which were promptly refused, as this was a case where plants were more highly prized than money. But since the death of the proprietor, the Rev. Thos. Staniforth, we have completely lost sight of this collection. They are easily propagated from seed, it taking from two to three years for the seedlings to bloom from time of sowing. They are also propagated by offsets and by division of the bulbs. Thrip and Red Spider sometimes infests the leaves, and this can only be checked by frequent syringings and sponging the under side of the leaf. There are several varieties in this class that it is not important to

mention in a work of this sort. The Formissisima is the smallest and the Graviana the largest.

#### NERINE.

An elegant genus belonging to the order Amaryllis, consisting of several bulbous plants well deserving general cultivation on account of the great beauty of their flowers and the peculiar season at which these are produced. They are mostly natives of the Cape of Good Hope; there are, however, a few exceptions. The flowers are borne upon erect scapes, in large umbels, and are produced before the leaves appear. Nerines are easily grown, and should be potted in a mixture of good sandy loam, to which may be added some well decomposed cow manure and good leaf mold. After the growth is completed water must be entirely withheld, or at least only just sufficient to keep the bulbs plump must be given, until it is desirable to start them into growth; but if they are allowed to come at their natural time, water must be given as soon as the scapes begin to push up. They may be increased by division of the bulbs, and also by seed. In the extreme South they thrive well without further protection than a little covering of leaves or litter through December and January or anytime when a cold snap may be expected. There are also many varieties of this species, which is usually denominated the "Gurnsey Lily," yet technically it is not a Lily, nor a native of that little island in the English Channel bearing that name, but comes to us from Japan.

#### ACAPANTHUS UMBELLATUS.

This fine old plant is well known in gardens under the name of the Blue African Lily, and is one of the most ornamental plants that can be grown for late Summer and Autumn blooming. The leaves are long and strap



Calla Lily.

shaped, of a dark green color. The flowers are rich deep lilac, borne in many flowered umbels, and continue a long time in perfection. They make beautiful specimens whether grown in pots or tubs, for the porch or lawn in the Summer months. These plants associate well with water, and have a beautiful effect when placed around a fountain. They delight in abundance of water during their growing season, but in Winter very little is necessary. They are propagated by division of the roots, and are a native of the Cape of Good Hope.

#### CALLA LILY.

The name Calla was first given to this very popular plant by Pliny. It is also known as Egyptian Lily, Lily of the Nile, and technically *Richardia Æthiopica*. It is a native of the Cape of Good Hope, and was introduced into England in 1731. It is of easy culture, only requiring an abundance of moisture when in a growing condition, in fact if the pots are stood in water deep enough for the water to come half way up the pot, they will grow with much more luxuriance and flower more freely. The Calla is largely grown for Winter blooms, and by a simple method are easily produced through the mid-Winter and holiday season. After Spring flowering the pots ought to be turned on their sides, say about June 1st, and allowed to remain in this position until some time in August; if not exposed to the sun, or with the protection of a shed or a dense shade of trees, they will take no start in this position until the time named, when they should be completely shaken out and potted in nice rich light soil, in small pots, and should have plenty of water when they commence to grow. Thus treated they will grow rapidly and will soon need moving into larger pots than those they were started in. By giving them a



warm position in a pit or greenhouse, with plenty of water, they will bloom by Christmas. During the resting period all the foliage will dry away, and when the time comes to start nothing will be left but the root. It is not best to give Callas too much pot room, as this causes them to produce more leaves and less flowers. Better grow in small sized pots and feed with liquid manure. When an excess of leaves occur, cut them off; by this method the plants can be grown more closely together and more flowers produced. Should you have but a few plants and wish to grow them as specimens, the cutting of the leaves off would detract from their appearance. The Calla is a good Winter or Spring flowering plant for the room, but must have plenty of water and an occasional syringing or washing off the leaves to keep them free from dust and Red Spider. There is also a Spotted Calla, pretty on account of the spots or marks on the leaves, but the bloom is of no great value. There are other species called the Yellow Calla, the Black Calla, which properly speaking are Arums, and not near as desirable as the primitive Calla. This species are all propagated by offsets, which should be taken off when the plants are at rest and grown on in small pots for a season or two.

#### IMANTOPHYLLUM MINIATUM.

This is also similar to the Amaryllis and Vallota, and will succeed well under similar treatment. They are not hardy in this State, and must be grown as a pit or greenhouse flower. It forms a stout, bold looking tuft of leaves, from one to two feet high, broadly sheathed at the base, and of an intense green color on both sides. The flower scapes rise to about the same height as the leaves, and support a large umbel of from ten to twenty

blossoms, which are individually upwards of two inches in expansion, and about the same in length, somewhat vase shaped, the outer half of the segments a fine deep orange color, shading to vermilion, the lower part of a deep buff, and the anthers and style bright yellow. It blooms at various seasons. It is a native of Africa.

#### VALLOTA PURPUREA.

This beautiful Cape bulbous plant, which should be in every collection, is with difficulty surpassed during the Autumn months by any other plant, either for greenhouse or house decoration; it also does well in pots and makes a decided ornament for the porch, or South of this point may be grown in the open ground as a regular garden plant, where it will bloom every season without much care, and its beautiful scarlet flowers always attract attention. It is similar to the *Amaryllis*, and is a native of the Cape of Good Hope. It is propagated by offsets.

#### AMAZON LILY.

This is a very handsome variety, known to the trade as *Eucharis Amazonica*. It is a native of South America. Only in the extreme South will it succeed in the open ground, and should be grown in a warm greenhouse. The flowers are produced in a truss of from four to eight, according to the size of the bulb, and are borne on a stem that lifts them just above the foliage. They are of pure waxy white, and of great substance. The plants may be potted at any time of the year, taking care not to damage any of the bulbs or roots, and remove as much of the old soil as possible. The soil should be composed of loam, leaf mold and sand, and well rotted manure, in equal proportions; also a little bone dust is an advantage to them. The pots should have good drainage by placing a few broken pieces of pots over the holes. Give liberal



*Eucharis Amazonica.*

waterings and frequent syringings. The under sides of the leaves will need inspection often, as it is subject to attacks of mealy, and this is the first place they locate. They must be sponged off as soon as they appear. Side shoots may be taken off at any time and potted into small pots, and grown on in this way to increase the stock. The three species in present cultivation are *Eucharis Grandiflora*, *Eucharis Candida*, and *Eucharis Amazonica*.

#### LILY OF THE VALLEY.

This is a plant so well known and such a universal favorite that little need be said in the way of a description. A modern writer in the "Treasury of Botany" says. "Without poetical or fanciful conventionalities the Lily of the Valley is as perfect an emblem of purity, modesty and humility as the floral world affords." The flowers of the Lily of the Valley are used in immense quantities in all the large cities of the country through the Winter months for the purpose of bouquet making and all sorts of cut flower ornamentation. In New York city it is estimated a million of these blooms are sold annually; the average price is about five cents each, so that for this flower alone \$50,000 is annually paid by the florists of New York to the growers in the vicinity, and the consumer no doubt pays one-third more. Those pips or crowns that are generally forced are imported from Germany and France. This is a great favorite all through the South, and does well in any garden soil, and will grow under the shade of trees, in fact partial shade is better for it than a fully exposed position to the sun. It blooms best when allowed to grow undisturbed for years. The roots that have been forced to bloom in Winter in the greenhouse are of but little account, as it takes years for them to recuperate after their blooming

period in the greenhouse is over. They are propagated by division of the chumps.





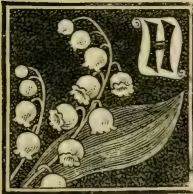
## CHAPTER VII.

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### WATER LILIES AND AQUATIC PLANTS.

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Now folds the Lily all her sweetness up,  
And slips into the bosom of the lake ;  
So fold thyself, my dearest, thou, and slip  
Into my bosom, and be lost in me,—TENNYSON.



**H**ARDLY anything in the flower garden affords more pleasure than a pond or pool full of Lilies and aquatic plants. By a judicious selection of a position where the surroundings will be in harmony with the pond, so that it may be all the more easily beautified by some tall growing plants, such as Musas, Cannas or Caladiums. If expense is no object, the basin may be dug out as large as required and bricked up with cement to the ground level. Small divisions of single bricks laid in cement must run through it at certain distances to confine the roots of the particular sorts to themselves, otherwise they would all run and mix together and be one great promiscuous bed, in which the stronger growing varieties would crowd out the less vigorous ones. The Nelumbiums would eventually fill the entire pond, as they are most rapid growers, and in the planting of a Lily pond the Nelumbium makes the finest plant for the

centre. A much less expensive pond can be made by beating the surface of the excavation with some heavy pieces of wood and then covering it with a good coating of cement. In this case the sides must slope in and not be perpendicular, as if brickwork was used. It is only in the South where no severe frosts occur that this plan would be successful. Where natural ponds are found, of course all this trouble will be done away with. We have made here a large artificial basin about fifty feet in diameter, from three to four feet deep, without any brickwork, but as we have a stiff red clay soil only a light coating of cement is necessary to keep it water tight. It is planted with a choice assortment of Lilies and aquatic plants, and during the Summer months is the most attractive feature we have on the place. The surroundings are all planted with Cannas, Caladium Esculentum, and a few Bananas give it a decidedly tropical aspect. A number of gold and pearl fish find an enjoyable home among the Lilies. A handsome rustic bridge spans the pond at its widest point, thus giving visitors a good opportunity to more closely view the charms of the many varieties of Lilies from the vantage the bridge affords them. Such things as this blend most harmoniously with all flower gardening and home decoration where there is ample room for such an arrangement. Most of the parks and Summer resorts all through the Northern and Eastern States have their Lily basins or pools, and in New York city these Lily pools are to be met with in most of the squares, and are objects of much interest and curiosity. The Nelumbium, the Chinquapin of the South, is to be found in most of these aquatic gardens, and meets with an appreciation that is not accorded it by a Tennessee or Kentucky farmer when he finds it establishing itself in his stock ponds, for it eventually

dries up the ponds. It is not necessary to make a pond or basin to cultivate these choice flowers, although in these they attain their finest perfection. In lieu of a pond, however, a tub or barrel cut in two and sunk in the ground up to the rim, and filled to half their depth with a mixture of loam and well decayed manure, which should be covered with about two inches of sand after the roots are planted to prevent the manure from rising to the top, and give the water a clear appearance. Fresh water should be added occasionally, and a frequent running over of the tubs will help to keep it clear and the plants growing vigorously. We give below a few of the plants most admired when growing in this way.

#### NYMPHŒAS.

This genus consists of beautiful water plants found in lakes, ponds and rivers in almost all parts of the world. *Nymphœa Odorata* is the double white Water Lily or Pond Lily so common and well known throughout the Southern States. Of this species there are several varieties, mostly having pure white flowers, remarkable for their fragrance. There is, on the Island of Nantucket, a variety with pinkish flowers, and rarely with bright pink-red flowers. They are exceedingly beautiful, and valued highly for their rarity. The cultivation of all our native species in tubs on the lawn, or wherever desired, is attended with but little difficulty. The roots should be obtained from their native habitation as early in Spring as possible, or at least before they have made much growth.

#### DENTATA.

This magnificent species has very large, peltate, dark green leaves, serrated at the margins. We have seen them grown upwards of two feet in diameter, and the

plants twenty feet across. The flowers are of great size, measuring from six to fourteen inches in diameter, many petaled, and pure white; it is a most profuse flower. Native of Sierra Leone.

#### DEVONIENSIS.

A splendid free-flowering variety, with leaves somewhat like the preceding. The flowers are a brilliant red and measure five or six inches in diameter. If allowed, it will bloom without intermission the whole season through. A garden hybrid.

#### CÆRULEA.

A lovely plant, which was no doubt held in great estimation by the ancient Egyptians, as it so frequently occurs on their monuments and in their hieroglyphical writings. The leaves are peltate, nearly entire, bright green; the flowers are blue, most delicately scented, and produced abundantly all through the Summer. Native of Egypt. This is the Lily it is said Moore mentioned in The Vale of Cashmere, when he sang—

“The flowers of the valley all bending with dew,  
And the sweet Water Lily of exquisite blue.”

#### RUBRA.

This is a fine distinct kind. The leaves are slightly peltate, somewhat ovate, sharply toothed, downy on the under side and a dark bronzy green above. The flowers are nearly as large as *Dentata*, and of a deep crimson color. It is a native of the East Indies.

#### SCUTIFOLIA.

The leaves of this species are smooth on both sides and dark green above. The flowers are bright blue, and sweet scented. It differs from *Cærulea* by its much larger and

many petaled flowers. This is a native of the Cape of Good Hope. There are many other varieties of Nymphœs, but the foregoing are the most prominent, and also many other aquatic plants of interesting habits, but too numerous to mention here.

#### NELUMBIUM SPECIOSUM, OR EGYPTIAN LOTUS.

“The Lotus-flower, whose leaves I know  
 Kiss silently,  
 Far more than words can tell thee, how  
 I worship thee.”—MOORE.

This genus contains several beautiful species, which are aquatic plants, growing in ponds and slow-running streams. *Nelumbium Speciosum* is the Sacred Bean or Sacred Lotus of India. It is a native of both the East and West Indies, China, Japan, Persia, and Asiatic Russia. According to Thunberg, it is esteemed a sacred plant in Japan, and pleasing to their deities, the images of their idols being often represented as sitting on its large leaves. The worship of the Lotus was common with the ancient Egyptians; it is not now, however, to be met with on the Nile. Herodotus described the plant with tolerable accuracy, comparing the receptacle of the flower to a wasp's nest. Sculptured representations of it abound among the ruins of Egyptian temples, and many other circumstances prove the veneration paid to this plant by the votaries of Isis. The Chinese have several varieties, the more beautiful being the rose colored flowering one. They have always held it in sacred regard. That character has not, however, limited it to merely ornamental purposes, for the roots are not only served up in Summer with ice, but they are also laid up with salt and vinegar for the Winter. The leaves are covered with a fine microscopic down, which, by retaining a film of air over the upper surface, prevents it from being wetted



when water is poured on it, the water rolling off in drops; this has a very pretty appearance, the drops of water looking like drops of molten silver. The Hindoos have a proverb founded on this peculiarity of the leaves, to the effect that the good and virtuous man is not enslaved by passion nor polluted by vice; for though he may be immersed in the waters of temptation, yet, like a Lotus leaf, he will rise uninjured by them. This wonderful plant, though coming from such tropical and semi-tropical regions, has proved to be entirely hardy in this country. No aquatic plants have a more tropical aspect than the Nelumbiums. It will flower the first season it is planted, and is constantly in bloom from July until late in October. It produces some leaves thirty inches across, on foot stocks five and six feet in height, and flower stalks of a total length of five to seven feet. On their first appearance the flowers look like gigantic Tea Rose buds, of a bright rose color, next in form like a Tulip, the base of the petals being creamy white, most beautifully and delicately shaded off toward the end of the petals into bright pink, and when fully expanded they measure from ten to thirteen inches. The plant is of a rambling nature, and when placed in the water spreads rapidly.

#### NELUMBUM LUTEUM.

This is the true American Lotus, and is found in the Southern and some of the Western States in great quantities. In Kentucky, Tennessee and Mississippi, they are to be met with in most ponds, and make a grand display in August, when they bloom. They differ little, only in color, from the Egyptian Lotus, the habit being about the same. The color is a light yellow or straw

color. It is called Chinquepin in the South. They are easily divided by division of the roots.

### VICTORIA REGINA.

This noble and gigantic Water Lily was found by Sir R. Schomburgh, in the year 1826 or 1827, growing in the tributaries of the Amazon River; in this country it has almost always proved of only annual duration, though one or two instances are on record of its living two years. The temperature of the water it is growing in should never fall below 80°. This can be grown in very few establishments, on account of the immense space it requires in order to develop its beauties. The tank for growing this plant should be at least twenty feet in diameter, but it is better if about thirty, and circular; it should be from three to four feet in depth, and heated with hot water pipes. Some have pipes under the plant itself, but this is open to objection, as we have known the roots, and consequently the plant, much injured by coming in contact with them. The soil should be good mellow loam and well decomposed manure, in about equal parts, and mixed with a good portion of river sand and a little peat. The quantity required will be about two loads; it should be well mixed, and placed in the tank before the water is admitted, after which the water should be run in, and be allowed to stand a week or two, so that the soil may become well warmed before an attempt is made to put the plant into it. The seeds should be sown early in January, in a small tank where a good command of heat is to be had, and a uniform temperature of about 85° can be maintained. We have always found that the seeds vegetate very much quicker if a little soil is put at the bottom of the tank, and the seeds are just dropped on to it, than when sown in pots. As it is desirable to get

them up quickly, this plan should be adopted by those intending to grow the plant. When the young plant has made four or five leaves it must be lifted, and potted into the soil recommended, but as very little can be put into the small pots that are first used, some pieces of broken pots or stones should be laid on the surface, to keep it firm and enable the young and small roots to take hold of the soil; this operation must be repeated whenever the pots are getting filled with roots, never forgetting to have the soil well warmed before potting, for the least chill endangers the well-being of the plants for the entire season. About the end of April, if the season is fine, or the beginning of May, if it be dull, the plant selected for flowering, and which will now have leaves from one and a half to two feet in diameter, should be placed in the soil, already made thoroughly warm for its reception, in the large tank. The crown of the plant should be about nine inches under the water when first planted, but as the crown gains strength it will soon get to the top. If all should go well by the middle of June the leaves will present a fine appearance. The largest we ever saw was a little over seven feet in diameter of leaf, and twelve to sixteen inches in diameter of flower, and presents in this state a truly magnificent appearance. The flowers are only of two days duration. The first day it will open about 6 p. m., and continue open until nearly the same time next morning, after which they rapidly close and remain so until evening again. In this stage it is deliciously fragrant, emitting its perfume for a long distance, its petals being erect and pure snow white when it opens; the second evening the petals have undergone a complete change of color, and the fragrance gone altogether. The flowers now reflex so that the point of the petals nearly touch the water, and are a rich rosy pink, forming a

beautiful coronet. Towards morning the flower closes and in the course of the day sinks below the surface of the water to ripen its seed. Only one flower, as a rule, is open at one time on this plant, but, if in vigorous health, there will not be more than one evening's interval, and not always that, and we have seen, though very rarely, two flowers open together, one in the first and the other in the second stage; when seen thus it is grand in the extreme, and would repay even double the trouble it causes. Mr. Henry Gray, florist at the Central Hospital for the Insane, near Nashville, Tenn., cultivates this plant with great success, to whom we are indebted for much information regarding it. In the extreme South, if strong plants could be secured, it could be bloomed out of doors without artificial heat, by planting them in shallow ponds where the sun would make the water very warm. It should not be put out before June, as at that time all conditions would be most favorable to its well being. The best plan would be in this case to plant it in a large tub, and when the atmosphere and water was of a suitable temperature, sink it tub and all into the pond. If the pond is deep the water will be apt not to get sufficiently warm for this plant, and for this reason a shallow pond is to be preferred. In a shallow pond, say about two or two and a half feet deep, with our July and August sun, it will get warm enough for this purpose.



Begonia "Metallica."



## CHAPTER VIII.

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### BEGONIAS.

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BEGONIAS are a very extensive family and one that contains some beautiful plants, which are useful for decorating the greenhouse or window garden and filling stands or *table* work on the lawn, and can be used with fine effect for rock work in shaded situations on the lawn or flower garden. There are about three distinct classes of this plant, which consist of the flowering species, the ornamental leaved, and the tuberous rooted sorts. The Flowering Begonias are well suited for amateurs who cultivate a few plants in small greenhouses, as they are of the simplest cultivation and thrive well in any ordinary rich soil, if allowed an abundant supply of water. The Begonias are found widely distributed over the world. In the East Indies they are found from the low ground up to the region of slight frost and snow. Several species are found at the Cape of Good Hope, where they frequently become tuberous rooted; and the genus is very common in the West India Islands, in Mexico and throughout the largest portion of South America. The flowering kinds are so numerous, and a great improvement is at present going on among

them, so that new varieties are catalogued now every year by parties making a specialty of this class of plants, that we will not attempt to give any detailed list of varieties at present in cultivation. The old variety of *Begonia Metallica* is about as popular as any in this class, and is to be found in every collection of greenhouse plants where any pretensions are made to have a fair assortment. Sutton's White Perfection is another very pretty variety, its pretty white flowers that are produced most freely, and its bright green leaves, renders it an interesting plant for amateurs to cultivate. *Semper-florens Gigantea Rosea* is also a noble plant in this class. It is newer than the others and not so generally known. Its bright coral red blooms with large handsome foliage always commands attention for it. The old *Begonia Rubra* is a handsome plant, and makes a pretty display in any collection of plants. All *Begonias* grow well if potted in a compost of peat, loam, and thoroughly decomposed manure, in equal parts, with a small quantity of sand added, and they may be kept in a small state with great ease; but if fine specimens are required, they should be encouraged by frequent shiftings as the pots become filled with roots. When they are past flowering let them be cut down, the old soil shaken from the roots, and the plants repotted in smaller pots, so as to allow of being shifted and grown on for the next season's blooming. These plants are exceedingly easy of increase, which may be effected either by cuttings, or seeds; in the latter way many new kinds may be obtained, especially if several species or varieties are in bloom in the house at the same time. Looked upon in the light of exhibition plants, but few even of the best of the flowering species and varieties of *Begonia* would be thought admissible; but these plants are thoroughly appreciated in the dull

dreary months of Winter, when they so beautifully enliven our houses and dwelling rooms with their varied hues and graceful flowers, as well as delight our senses with their delicate fragrance. Many of them are well suited for growing in baskets, and if the species with creeping stems are selected for this purpose they will form beautiful objects. A reference to any of the catalogues so freely distributed through the mails in this present age, will give lists and description of all the most popular sorts in cultivation.

### BEGONIA REX.

This beautiful plant is a native of Assam. It is of robust though dwarf habit; its leaves are dark olive green, a broad band of silvery white traversing it midway between the centre and the margin. It is yet a really fine variety, notwithstanding the innumerable handsome varieties that have been raised from it and its progeny. There are hundreds of fine sorts growing extensively all through the country to-day known as *Begonia Rex* that are not the particular variety just referred to, but seedlings raised from this sort, and all are known in the plant trade of to-day as the *Rex Begonia*. They all, however, partake of the characteristics of the parent plant, and are noted for the exquisite variegation of the foliage; and although the flowers of this class are not so attractive as those of their plain green leaved relatives, yet they are sufficiently large and produced in sufficient quantities to make them very effective in the greenhouse, not to mention the great beauty of the leaves. Some people grow these plants for Summer decoration only, resting them by partially drying off during Winter. This we consider a mistake, as they are so very attractive during the dull months, and require but little attention, although they



Begonia "Semperflorens Gigantea Rosea."

would amply repay the most tedious care. To grow these plants well, the soil should be composed of one part of sandy loam, one part peat, one part leaf mold and well decomposed manure, and one part sand. During the Summer months they require an abundance of water at the root to prevent the edges of the leaves becoming brown, which is a great disfigurement to them, but in Winter much less must be given. A frequent sprinkling or syringing of the foliage to keep them clean greatly enhances their beauty; also a good shady position must be afforded them, as the coloring of the leaves is not near as vivid when exposed to the full sunlight in Summer as when grown in the shade. In fact the finest plant of *Begonia Rex* we ever saw grew under a bench in a conservatory, where the roots had ample scope and a gleam of sunshine never struck it. All the varieties of *Rex* are easily propagated either by stem cuttings or by leaves; in the latter case the leaves must be laid upon the propagation bed and the primary veins cut in numerous places, using a few pieces of broken pots or stone to keep the leaves pressed firmly to the sand, and in a short time numerous plants will spring up all around to reward the operator. The older and more matured leaves are best for this purpose; they are not as likely to damp off as the younger and more tender leaves. About two-thirds of the leaf may be cut away, and insert the leaf stalk in the sand or propagation box as you would an ordinary cutting, and in this way it will root and produce a fine plant, but this is something of a waste, as several plants can be raised from one leaf by laying it flat upon the surface of the sand or propagating material as before stated, and only one plant is generally secured by the other method given. The *Begonia Rex* produces a charming effect planted amongst Ferns. The moist air necessary for the





Tuberous Begonias.

development of Fern fronds being most conducive to their luxuriant growth, and have seen them so used and forming groups of the greatest beauty. There are an immense number of varieties in this class, some kinds resembling others so nearly that it is a matter of difficulty to distinguish them. It is useless for an amateur to grow two kinds so nearly alike. We will not enumerate any in this class, as the particular varieties are known to florists and plantsmen by different names called after some notable of rank, in whose garden it may have chanced to originate. With most of the ladies in the South the term *Rex Begonia* covers the entire group. A most peculiar new one has been catalogued for the past few seasons that differ much from any variety of this class hitherto cultivated by a peculiar whorl in the leaf. It comes to us bearing the euphonious cognomen of Countess Louise Erdody, and is at present the *Begonia* par excellence, and a plant of unusual beauty and growth. It originated with the gardener of Count Erdody, a Hungarian nobleman. The leaf, which has a metallic luster, appears dark silvery in the centre, shading into coppery rose toward the margin, which is broadly and evenly edged with the same hue, but darker and more brilliant. The veins are yellowish-green on both sides, accompanied by a dark green ribbon, while owing to an elegant undulation of the leaf they run in a sort of groove close to the margin of the leaf. The striking peculiarity, however, which distinguishes it from all other *Begonias*, consists in the fact that the two lobes at the base of the leaf do not grow side by side, but one of them winds in a spiral-like way until in a full-grown leaf. There are four of these twists lying on the top of the leaf nearly two inches high. It is truly a curiosity, and one but little known. This variety retains the general character of the *Rex*



Countess Louise Erdody.

family as to growth, but is so distinct in growth and peculiar in its leaf development that it stands out unique and striking in all its individual beauty.

### TUBEROUS BEGONIAS.

There is at present a growing craze for this class of plants, and many florists grow them largely and catalogue them extensively. The magnificent coloring, large size and effectiveness of this very handsome flower is only now beginning to be appreciated and used with fine effect for Summer bedding plants in many places in this country. Many of the flowers vie with the Orchids in richness and delicacy, and all have a waxy appearance that surpasses in brilliancy all the other Begonias. This class is raised from seed very freely and is the best method for its propagation. It has tubers like a potato, and must not be kept growing only about nine months out of the twelve. If it is desired to have an outdoor display, choose a position, when possible, where the plants will have plenty of moisture and partial shade from the midday sun. The soil should be rich loam and the tubers planted not more than two inches deep from the crown of the bulb, after all danger from frost has passed. In hot or dry weather a slight sprinkling of water will assist them, but under no circumstances should they be saturated until growth has fairly commenced. After the leaves have begun to develop place a mulching of short manure or grass over the beds about two inches deep, for the two-fold purpose of preventing evaporation and keeping the soil from becoming hard, which usually occurs after frequent watering or storms. Those possessing a greenhouse can have large plants for bedding at the proper season by starting the bulbs any time after January. If preferable to grow on in pots, they should be placed in a three-inch

size, using a mixture of fibrous loam and leaf mold, with a little coarse sand, transferring into larger ones as they fill with roots, at the same time taking care to have plenty of drainage. When the pots are well filled, liquid manure diluted with water should be given them every three or four days, which prolongs their season of blooming, besides intensifying the color of flowers and foliage. When plants cease flowering and growth, it is a sign they are about to rest. Water should now be sparingly applied, giving only sufficient to keep the leaves from flagging, and as they turn yellow it should be withheld altogether. The pots should now be turned on their side for a few weeks, when the soil can be shaken from them and the tubers placed under a greenhouse bench or elsewhere, away from pipes or heat, in a temperature of about 50°. If, through an oversight, the bulbs become shrunken, sprinkle lightly with water and they will soon regain their former freshness. As soon as frost has killed the tops of those grown outdoors, they should be cut down to within an inch or two of the ground, lifted and placed where they can dry. In a week or so the remainder of the stem will fall naturally away. All the earth should now be cleaned from the roots, which should be stored in the same manner as potatoes, or those grown in pots.





## CHAPTER IX.

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# GLADIOLUS.

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THE RE is nothing in the whole list of bulbous flowers more important than the Gladiolus. It is certainly a grand and beautiful flower, and so easily grown that any soil will suit it—the heaviest clay or pure sand—and the conditions must be hard indeed under which it will not thrive. The colors range from

pure white to dark crimson, with all intermediate shades of yellows, reds, pinks, purples, etc., with an almost endless variety of stripes and markings. For cutting for house decoration the flowers are especially valuable, for if the spikes are cut when the flowers first begin to open, and placed in water, the buds will open beautifully and will last for ten days. By planting some bulbs at intervals of two weeks from March 1st until August, a regular succession of flowers may be had until late in October. About the 1st of November the bulbs should be taken up, and after the tops have been cut off, stored away in any cool, dry place secure from frost, where they can remain without further care until planting time. The Gladiolus may be grown among shrubbery where it is



Glad' oius.

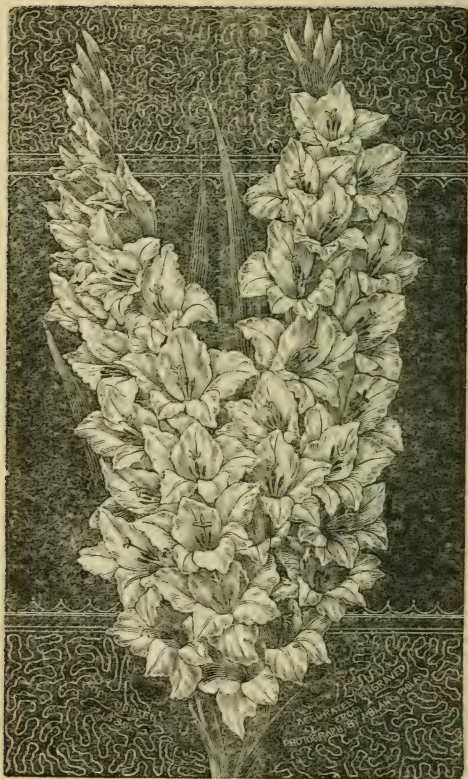
not too high, so that their blooms will show above it and will make a great show of beauty when these plants are not in bloom. Some of the varieties have such large and heavy heads of bloom that they will need a stake to keep them from falling to the ground, especially in wet weather. Most of this species are natives of the Cape of Good Hope, and have many varieties. It is more cultivated in America now than in any other country, and hundreds of fine hybrid varieties can now be found in the catalogues of parties making a specialty of this bulb. Although the *Gladiolus* multiplies itself from year to year, the way most adopted by all large growers is the system of

#### RAISING FROM SEED.

It is no more trouble to raise *Gladiolus* from seed than it is to raise any ordinary plant. With the simplest garden culture, there is an almost absolute certainty of success. Prepare your bed in Spring as for any hardy annual. Sow your seed, and cover to a depth of one inch; hoe as often as for other crops; keep them well weeded; take up the bulbs after the first frost, store them in some dry place for Winter, and set them out again in Spring in rows as you would onion sets, and a good percentage of them will flower the second year, and all of them the third season, and continue to go on increasing from year to year. In most of the Southern States this could be made a very profitable industry, and could be carried on in connection with the Tuberose culture now so generally done in many sections of the South. Parties in the North make this a paying business, and yet have not the fine advantages this Southern climate affords.

#### INCREASE BY BULBLETS.

The increase of valuable and handsome kinds is generally effected by the little bulbs or bulblets that form at



Gladiolus "Snow White."

the base of the large bulb, and are produced on some varieties in great numbers, on others in less quantities. Some sorts will have on an average a hundred in a year, others scarcely produce any. The little bulbs should be removed during Winter from the old bulb and planted in Spring, giving them the same treatment as recommended for the seedlings. If planted in a good light soil that has been freely manured, and through the warm weather given a mulch of sawdust or other non-conducting material to keep the sun from heating and drying the ground up too much, most of them will flower the second year. They should be sown in drills about six inches wide, about enough to get a hoe between them, and about one foot between the rows. As the bulbs are nearly hardy, they may be set out as early as the ground is fit to work, and even though there may come a frost, the bulbs will not be injured, and in this way have a longer season to grow.





## CHAPTER X.

# THE TUBEROSE.



THE original Single species is a native of the East Indies, and was introduced early in the sixteenth century. At a much more recent date the common or tall-growing Double Tuberose was raised from seed by Mons. Le Cour, of Leyden, Holland, who for many years would not part with a root, destroying all surplus, so that he could say that he had a monopoly of the only Double Tuberose in the world. The recently introduced variety, known as the Pearl, is a sport, having originated at Flushing, L. I., in 1865. Its strong habit of growth, and dark, heavy foliage attracted attention, causing it to be given every chance for perfect development. The result was a variety far superior to the parent, both in size and number of flowers, with a marked superiority in habit of growth, the flower-stalks not being so tall by nearly a foot as the original, a feature making it invaluable for greenhouse culture. The Tuberose delights in a strong, rich soil, deep and moist. Manure, heat, and water are essential to its perfect development. For cultivation in the open border, the bulbs should be

planted about the 1st of April, covering the tuber about one inch with light, fine soil. No other care is needed than that usually given garden plants. The only care required is in the selection of the bulbs, which, if kept moist and cool during Winter, are liable to rot away in the centre, rendering them worthless for flowering. Perfect tubers will always be green at the top, or at least sufficiently so to show signs of life; and in choosing, all others should be rejected.

### TENDENCY TO SPORT.

Many growers of this flower have been sadly disappointed in the results of their flowers, owing to its tendency to sport, the flowers coming single instead of double, and they naturally ask the cause. We can only say, there is a tendency in all sports and hybrids to return to their original form, and the Double Tuberose is no exception to this rule. It has been known where large stocks were double one year and come nearly all single the next. We cannot satisfactorily account for it, and only know the annoyance is common in every place in which it is grown. Poor cultivation may have something to do with it, consequently high cultivation and a rotation of soil is about the best we can suggest for the prevention of this evil.

### FIELD CULTURE IN THE SOUTH.

The field culture of the Tuberose is now a large and important industry in nearly all of the Southern States, millions being grown not only for home use but for exportation to Europe. Hitherto they were grown almost exclusively in Italy, but within the past fifteen years European dealers in the bulb find they can get a better article at a cheaper rate from the United States. The



Tuberose.

sets are taken from the old bulb that has flowered during the Winter months and set out in Spring as soon as the weather permits. The plan generally adopted is, after thoroughly plowing and harrowing the ground to mark out furrows three and a half feet apart with a plow, six or seven inches deep, and ten or twelve inches wide. In the bottom of this furrow spread some well rotted manure. Two or three inches of soil is placed on top of this and the Tuberose sets are then planted in this prepared furrow in two rows nine or ten inches apart and five or six inches between the sets. The object of this plan is, that you get the benefit of the manure for two rows instead of one, as is the case when one row only is planted in the furrow, in the usual way. It is a little more labor to cultivate, but the saving in manure, in time in making furrows, and in planting by the double row plan, more than offsets this. Northern dealers complain of Southern Tuberoses as being sometimes worthless to them on account of not being properly harvested in the Fall. Southern growers should give this matter more close attention, as the evil can be easily remedied. The trouble is caused by leaving them too long in the ground in the Fall, so that they keep growing, and in consequence the embryo flower bud starts in the dry bulb. The best way to grow good bulbs in the extreme South is to use sets no larger than peas, if they are to be left in the ground until November. From such small sets there would be no danger of the flower bud forming prematurely. If large sets must be used they ought to be dug in September. Great care is necessary in harvesting Tuberose bulbs. They should never be placed in heaps large enough to generate heat, but should be spread on the ground and dried well in the open air; when thoroughly dry the bulbs may be cleaned by rubbing off the

dead roots and breaking away the little sets that may have formed during the Summer. When perfectly dry they may be put in barrels and kept in a cool place, perfectly dry, and where the frost cannot reach them. It is also best to sort out the different sizes and keep them separate, as small bulbs mixed with larger ones tend to lessen the value; better have different grades to offer at different prices than a regular mixture of all sizes. Ladies and amateurs generally plant their Tuberose bulbs out in Spring just as they took them from the ground in the Fall. This is a mistake, as all the little sets should be broken off, and if desired, planted somewhere to grow on to make flowering bulbs for the next season. Only the strong bulbs should be planted where they are expected to flower, and these form a nice green tuft of leaves with a handsome flower stalk in the centre, and not a grassy like clump of leaves and poor flower stalks as you would have if the sets and flowering bulbs were planted together without being divided.





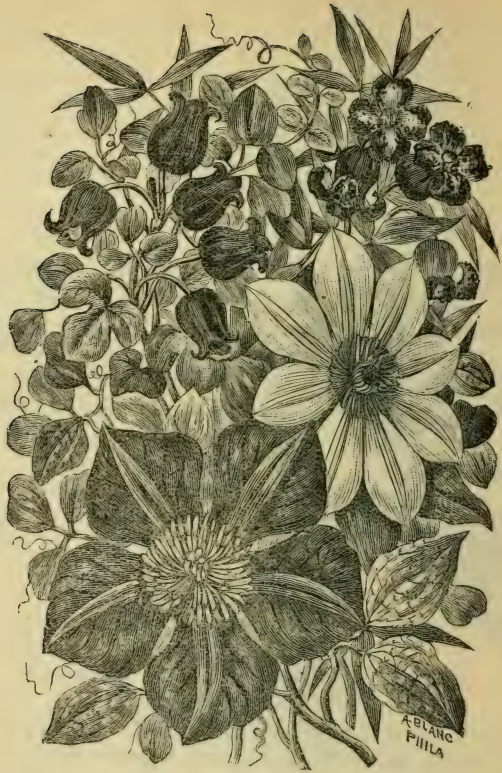
## CHAPTER XI.

# CLEMATIS.



CLEMATIS' are the most magnificent of all hardy climbers, and the uses to which they may be applied are exceedingly various. They may be trained up snaggy poles, either singly or several together, to form pillar plants, or they may be allowed to scramble over masses of rock-work or root-work. They may be festooned, or they may be trained over verandas, or fastened to walls or trellis-work, or led over ornamental iron supports as single standard specimens for lawns. In either way and in every way they are found to be thoroughly effective as flowering plants, many of

them indeed, and especially those of the true *Jackmanii* type, being capable of producing a startling impression in consequence of the gorgeous masses in which their rich Tyrian hues are displayed. One of the most useful purposes to which these varieties of Clematis could be put would be to drape an unsightly bank or slope. They



Clematis.

will grow in almost any situation if the soil is not absolutely deficient of food, or if the roots of other plants do not rob them of a fair supply of nutriment; and in such situation nothing would be required but to throw down a few tree roots or rough branches for them to scramble over. Thus planted, a layer of manure worked in annually with the fork, and a supply of water in very dry weather, would secure a good result. Again, they rank amongst the noblest of ornaments for low walls, trellises, etc., to which they must necessarily in the first instance be nailed or tied; but once firmly fixed, they should be allowed to fall down in rich, picturesque masses. No home in the South, however humble, but should have a Clematis vine, and if your home is so situated that you can have only one vine, let that one be a Clematis, for of all the hardy running vines none are more beautiful and none more desirable, as they grow more beautiful each year after being planted. There are considerably over a hundred species, mostly from cold or temperate climates. They are wide-spread, in Europe from Russia to Portugal and the Baltic Isles; in Asia from the Ural range, in Siberia, to India and Java, and even to China and Japan. They show themselves in both Americas, in several Polynesian Islands, and even in New Zealand. Thus they extend from pole to pole, from the sea shores to the slope of highest mountains. Scarcely a species can be said to be without beauty, so graceful is their habit, or so bold and showy their flowers. The earliest flowering hardy species commence unfolding their blossoms in April, and these are succeeded by other species and varieties throughout Summer and Autumn, some of them continuing to bloom up to November. In color they present almost every shade and combination of red and blue, and pure scarlets and crimsons are not wanting. The lilac,

pale blue, purple, mauve, claret, violet-purple varieties, are connected by every intermediate shade of color. There are also yellow and many pure white flowered species and varieties, the flowers varying from less than one inch to eight or nine inches in diameter. There are a great many varieties of Clematis, and many of them are native plants. Clematis Virginiana is the well-known Virgin's Bower to be met with all over the country, and is much admired for its delicious fragrance and poetical associations. Clematis Crispa is another native variety now deservedly popular, but for the great beauty of flowers the Jacqueminot and Languinosa types have no superiors. The large flowering varieties were introduced from Japan and much improved in England, and new varieties raised from them. Mr. Jackman, of Working, Surrey, raised many beautiful sorts, that fine purple variety, Jackmanii, being named after him.

#### CULTURE AND PROPAGATION.

After the Clematis gets well established, it needs but little cultivation; tying and training the branches is the most important part after they make a good start. The propagation of the Clematis by Amateurs is about the most difficult of any they attempt to raise. Many of them seed freely and can be raised in this way; they are also raised from the shoots of the half-ripened wood that roots freely during the Summer if placed in a cool, moist and shady situation. Some out of the way corner in the garden would suit for this purpose admirably. They can also be increased by dividing the roots, which are large and fleshy, and resembling very much the roots of Asparagus. In fact we have heard of an unscrupulous tree pedlar that sold his customers Asparagus roots for Clematis during one season's canvas. It is needless to

say he did not come around again the following season. The best way to propagate this class in the South is by layering. Take a few branches down from the porch or trellis that it is trained upon and allow them to lie flat on the ground; cut the leaves off a few of the joints, and make an incision about half way through on a joint with a knife, and by means of a hooked peg fasten it securely to the ground; a little soil may also be put over it at this place. This may be done in a few places upon the same branch, according to the length of it, and if given plenty of time will form roots at this point, after which they may be detached from the parent plant and removed to where they may be intended to grow. Thousands of fine roots of Clematis are annually imported to this country from France and Holland, where they are grown extensively, the climate there being most suited to its growth. The great heat of our Summers is the hardest test the Clematis has to stand. It is always best for this reason to plant them on the north side of the house, with a full exposure to that point. They will of course do well on any of the other sides of the house, but if it suits your purpose as well put them on the north side, as we have seen them attain finer perfection in a situation of this kind than in the other positions named.







*Passiflora Quadrangularis.*

## CHAPTER XII.

# PASSIFLORA.

We soar to heaven ; and to outlive  
Our life's contracted span,  
Unto the glorious stars we give  
The names of mortal man.

Then may not one poor floweret's bloom  
The holier memory share  
Of Him, who, to avert our doom,  
Vouchsafed our sins to bear ?



**A** MOST exquisite flower, that is the symbol of faith. The name was applied from the resemblance afforded by the parts of the plant to the instruments of our Lord's Passion and its attendant circumstances ; thus the three nails, two for the hands and one for the feet, are represented by the stigmas ; the five anthers indicate the five wounds ; the rays of glory, or, as some say, the crown of thorns, are represented by the rays of the "corona;" the ten parts of the perianth represent the Apostles, two of them absent, (Peter who denied, and Judas, who betrayed our Lord;) and the wicked hands of His prosecutors are seen in the digitate leaves of the plant, and the scourges in the tendrils. Had this genus been named by modern scientists, it is probable their

imagination would have taken a somewhat different direction. They are all handsome climbers, and mostly natives of South America and the West Indies, where they climb from tree to tree, forming festoons of the richest beauty. Many of them, moreover, produce fruits of great size, which are considered delicious adjuncts to the desert. They are plants of quick growth and very free flowering. The soil best suited for them is a mixture of light loam and fibrous peat, with a good addition of sand. They all require plenty of room, both for roots and also for their branches, and they make beautiful objects to cover a fence or any unsightly objects around our homes, and with but few exceptions all are hardy in this latitude, and nearly all will grow from year to year unprotected in the extreme South. Several varieties are very common all through the South.

#### INCARNATA.

This variety is to be found almost everywhere in this section, and fruits freely, which is commonly called Maypops; they are edible and as large as a hen's egg. Cærulea is the common blue variety, very generally seen in most gardens, and is best known of all this class. There are a number of hybrid varieties of great beauty of which we append a few.

#### EDULIS.

This is an old inhabitant of our gardens, but on account of its free habit of growth and abundant blooms, it well merits a place where accommodation for climbers exist; the flowers are white and blue, and sweet scented; these are succeeded by its elliptic dark purple fruits, which are very ornamental, and which in addition form a nice addition to the dessert. The leaves are three-lobed,

smooth, serrated at the edges, and dark green. Native of Brazil.

#### MACROCARPA.

As the name implies, the fruit of this species is very large, averaging between seven and eight pounds weight each. The leaves are oblong-ovate, much like those of *Quadrangularis*, and the flowers, which also closely resemble those of that species, are of great size, being of a rich reddish purple color. An excellent climber. A native of Rio Generio.

#### PRINCEPS.

This beautiful species has the leaves simple, glabrous, cordate-lanceolate in shape, and bright green in color. It continues flowering throughout the Summer, the flowers being of medium size, and of a bright scarlet color. Native of Brazil, and is not hardy in this section. It is also rather scarce, as it is difficult to propagate, and do not root well from cuttings. It is chiefly propagated by grafting on any of the free-rooting sorts, such as *Incarната* or *Cærulea*.

#### QUADRANGULARIS.

This species is commonly called the *Granadilla*, and is a very fine free-flowering climber. The leaves are somewhat cordate at the base. The flowers are very sweet, white outside, red within, the rays being variegated with white and violet. The fruits, when ripe, are six or eight inches in diameter, soft and quite smooth externally, enclosing within a deep purple pulp, the flavor of which is slightly acid, yet sweet. It is usually eaten with the addition of wine and sugar. To ensure the swelling of the fruits it is necessary to artificially fertilize the flowers, either with their own pollen, or with that of some other kind. Native of Jamaica. There is also a variety called

Quadrangularis Variegata similar to the above in every respect but has beautifully marked foliage, the large green leaves being blotched freely with cream and white spots in irregular and handsome profusion.

### CONSTANCE ELLIOTT.

This variety created a furor a couple of years ago as the new white Passion Flower. The flowers are pure white except a very slight coloring at the base of the corolla. To the list of climbing vines it is a decided acquisition. It is a most vigorous grower, but a very shy bloomer; it also produces some fruit. There are several other varieties not here enumerated. We have known a variety in an old country garden named *Gossypifolia*, with small white blooms not any larger than a fifty cent piece, the flowers of which were only expanded in the early morning. We have since lost all trace of this rather odd variety. With the exception of *Princeps*, all root freely from cuttings or layers, as recommended for *Clematis*.

All-beauteous flower! whose centre glows  
 With studs of gold; thence streaming flows  
 Ray-like effulgence; next is seen  
 A rich expanse of varying hue,  
 Enfringed with an empurpled blue,  
 And streaked with young Pomona's green.

High o'er the pointal, decked with gold,  
 (Emblem mysterious to behold!)  
 A radiant cross its form expands;  
 Its opening arms appear to embrace  
 The whole collective human race,  
 Refuse of all men, in all lands.



## CHAPTER XIII.

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### ALLAMANDA.

**T**HIS plant was named in honor of Dr. Allamand, of Leyden, and the genus consists principally of handsome climbing shrubs. It is a native of Brazil and was introduced in 1846. It produces quantities of large funnel shaped flowers, which are of a bright yellow color, with a deeper yellow throat. They are extensively cultivated in the old country for greenhouse and conservatory decoration; also are objects of much beauty in the greenhouses of the North, but in the extreme South, where they live out the entire season through, their beauty reaches its finest perfection. Their rich glossy foliage and deep yellow blooms contrast finely. The vines enjoy the hottest sun and for this reason are well adapted to the climate of the Southern States, though by no means hardy in this section. Through Louisiana, Florida, Southern Texas and Mississippi they luxuriate in the open ground without Winter protection, and under the hottest sun, and it is no longer uncommon to see their superb flowers around the porches and doorways in the Southern cities, their beauty commanding attention from the most careless. When not grown on a porch or trained on the arbor, they may be planted on the lawn and trained on a trellis of any desired shape to suit the taste of the grower. A slight cutting back in the Spring before they start to grow will induce them to put forth

more lateral shoots, and consequently get more flowers. They delight in a rich deep soil, with abundance of moisture during the growing season, as they are gross feeders and enjoy the warm sunshine all the better when their roots have abundance of good rich soil to feed upon and not suffering anything for lack of water. There are not many varieties of the Allamanda. The variety

#### HENDERSONII

is about the best known and the most abundant bloomer.

#### CATHARTICA

is a fine old species and very effective. The leaves are produced four in a whorl, which are obovate and smooth. The blooms are not as large as the other kinds, and consequently not quite so desirable.

#### GRANDIFLORA

is another good sort, and no other kind has the peculiar clear yellow throat of this species. It is a free bloomer and can be grown without any trellis if kept cut and trained as a dwarf plant when young.

#### SCHOTTII

is a strong growing species, producing oblong acuminate leaves about four in a whorl, and quite smooth on both sides; the flowers are large, of good substance, and a rich bright yellow. It is found in the province of Parahiba in Brazil, where it luxuriates upon the river banks. The variety

#### NOBILIS

differs in habit from all the rest, as it is not a climber; the habit is scandent, and can be grown as a handsome bush plant with fine effect. All this species may be increased by cuttings; pieces of the stems from six to

eight inches long, if put in the ground in the Fall in any of the States in which it is hardy, will root and form nice plants by Spring. They may also be increased in the same way in more Northern latitudes, where they are not hardy, in the pit or greenhouse.

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### PETUNIA.

**T**HIS makes a fine bedding plant for the South, as it stands the dry Summers admirably and will yield a quantity of bloom all the season through until killed by frost. They are all natives of South America and mostly confined to Brazil, where they are strictly perennial. They are of the easiest culture, seeding themselves when once planted, and growing in any soil that will sustain plant life. Only a few years ago they were comparatively little cared for until they were much improved at the hands of the florists both in this country and in England, or probably more, than any other which has been operated upon. Petunias are very gay flowers, the single ones being most effective as bedding plants, and the double forms making exquisite specimens for pot culture, supplying abundance of flowers for the decoration of the greenhouse, and for cutting for bouquets or dressing vases. There are a vast quantity of varieties in cultivation, which have sprung from the intermixture of the white-flowered *Nyctaginiflora* and the rosy purple *Violacea*. Many beautiful double varieties are now sent out each season claiming special merit; the double ones do not, however, bloom as freely as the single. Where a mass of any particular color is desired, it is better to root the cuttings of the favorite sorts in the Fall as you would Geraniums. For a mixed border the seed may be sown where wanted to grow, and if the ground is rich, single



Petunia.

varieties should be planted about three feet apart. Many fine varieties are raised in this country, and among them a fringed variety, from which the Germans have succeeded in getting a double variety finely fringed and quite a handsome bloom. In the extreme South the Petunia will stand our Winters, but finer blooms are produced from young plants set out in Spring.

### THE HELIOTROPE.

**T**HE Heliotrope divides with the Sunflower the fable of representing Clytie, who died of love for the sun, the course of which its flowers are supposed to follow. This is Ovid's relation of her fate:

She with distracted passion pines away ;  
 Detesteth company ; all night, all day  
 Disrobed, with her ruffled hair unbound,  
 And wet with humor, sits upon the ground ;  
 For nine long days all sustenance forbears ;  
 Her hunger cloyed with dew, her thirst with tears ;  
 Nor rose ; but rivets on the god her eyes,  
 And ever turns her face to him that flies.  
 At length to earth her stupid body cleaves ;  
 Her wan complexion turns to bloodless leaves,  
 Yet streaked with red, her perished limbs beget  
 A flower resembling the pale violet,  
 Which with the sun, though rooted fast, doth move,  
 And being changed, changeth not her love.

The Heliotrope was introduced from Peru in 1757, and is a general favorite for its delicious fragrance. It grows freely in the open air, though not hardy in this latitude. After the 1st of September and until killed by frost, it is a complete mass of bloom. It is also largely cultivated for cut flowers in the greenhouse in Winter. It delights in a light rich soil, but will flower more freely in a soil of only moderate richness. If the soil is very rich it pro-



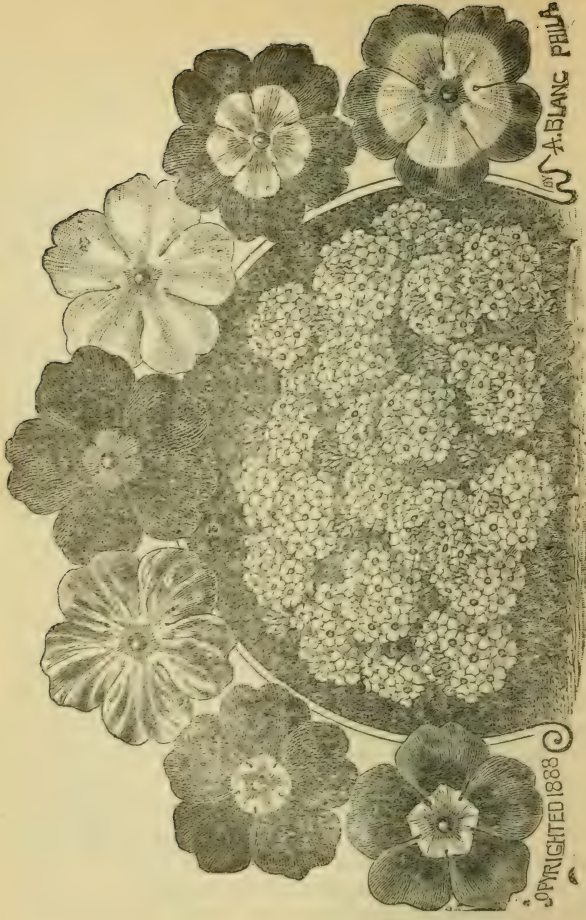
duces large vigorous foliage, grows rank and flowers only sparsely. From its peculiar aroma, it has led the plant to be known most familiarly as "Cherry Pie." For bouquet making it is not to be equalled, and a few plants should be in all collections. When pot specimens of these plants are required they should be frequently shifted, as they continue to grow and bloom during the whole Summer. In Winter they should be kept somewhat drier, and in the Spring the ball should be reduced and the shoots slightly pruned. When grown against a wall of the greenhouse, the plant is seldom out of flower at any time in the year, and is thus almost invaluable for yielding a supply of flowers for cutting. We have also seen it grown into standards with good advantage, as in this state it forms a fine object in the greenhouse. There is no trouble in propagating it from cuttings; the soft young tops root freely in sand, all that is necessary being heat, shade and moisture. There are at present a number of varieties on the market ranging from the purest white to the deepest purple. A double Heliotrope was sent out a few years ago, but it proved to be of little consequence; also a variety claiming to have a shade of red. We grew it for a few years but never saw any red about it. White Lady or Snow Wreath is the best white and Roi des Noir the finest and darkest purple, with dozens of intervening shades, all of which are very sweet and pretty and have numerous admirers. When grown in a greenhouse the Red Spider and Thrip sometimes attack the foliage. Plenty of moisture in the atmosphere and occasional syringings will soon banish these troublesome little pests.

## CHAPTER XIV.

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### VERBENAS.

**T**HE original forms of the Verbenas were introduced from Buenos Ayres in 1827, and some from Brazil, and all our fine varieties of to-day originated from these primitive sorts. They rank now among our most popular flowering plants for the Summer ornamentation of our gardens, and have become so popular and so well known that little need be said about them. Within the past few years a mammoth strain has been in cultivation that thus far outranks all existing varieties in their large blooms and exquisite coloring. There are more Verbenas grown and propagated we believe than any other one plant in America to-day, and are the most economical to buy if expense is a consideration, as a dozen plants that may be bought for fifty cents will make a handsome bed if planted together, and give a quantity of bloom all the Summer long. More than that, as the seed matures it falls to the ground and young plants will come up in the same bed next season. It is always best to plant Verbenas in a bed for themselves, as they do not mix well with other plants on account of their trailing habit. Verbenas are easily grown from seed, which should be sown in a hot bed or the greenhouse in early Spring, and at once pricked out before planting in the flower bed. Plants from seed will be more vigorous than from cuttings; but when special colors are wanted, seedlings cannot be depended upon. At the low price the plants are now sold in the markets, it is cheaper to buy them than to grow them from seed; but when the amateur is



A. BLANC PHIL

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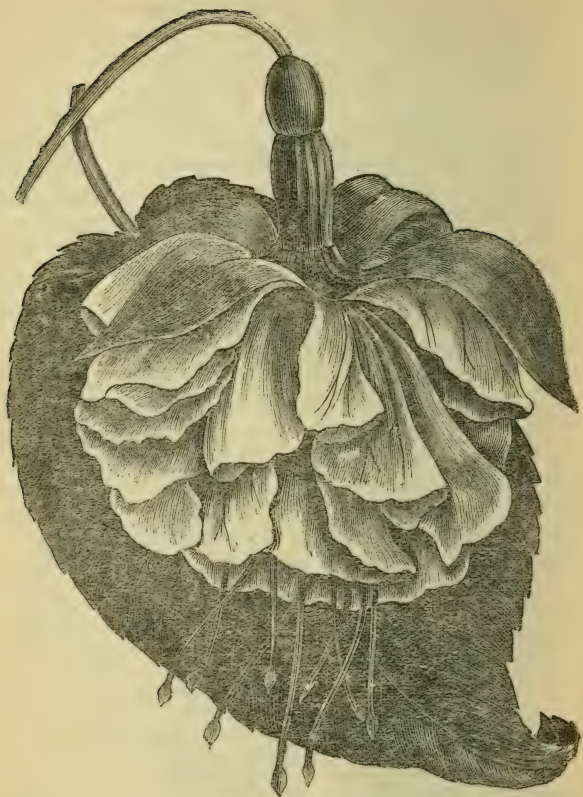
not convenient to the florist, the supply can be easily kept up from seed. In growing Verbenas, successive plantings should not be made on the same ground; the less frequently the better. It is not that they exhaust the soil that renders a change necessary, but when grown more than once on the same spot, they are far more liable to be attacked by the Aphis at the roots, which is fatal to them. The varieties selected by florists in the United States are far superior to those of Europe, so that for the past ten years hardly any importations have been made of either seeds or plants. The plant is better suited to our climate, and is far more extensively cultivated here than in Europe. By raising them from seed new varieties may be obtained, but all the named and standard sorts must be perpetuated by cuttings taken in the Fall. The soft young tops will root freely and will have finer blooms the next season than old plants kept over. They thrive best in a rich loamy soil, and enjoy deep cultivation. When grown in the greenhouse in the Winter, Green Fly and Mildew are their chief enemies. The first must be kept away by frequent light fumigations with tobacco, while the Mildew must be destroyed by dusting with flowers of sulphur.

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### FUCHSIAS.

Beautiful child of a tropic sun,  
 How hast thou been from thy fair home won,  
 Doth thy modest head as meekly bend  
 In thy one bright clime—or doth exile lend  
 To thy fragile stalk its drooping grace,  
 Like a downcast look on a lovely face?

**T**HE Fuchsia, like the Geranium, is known to every householder. Its merits as a plant for home decoration is well known; its beauty and gracefulness commends it to



Double White Fuchsia.



all. Nearly all the primitive Fuchsias are found in the Central and Southern regions of America, in shady moist places, in forests, or on lofty mountains of Mexico, Peru and Chili. It was named in honor of Leonard Fuchs, a German botanist. Many varieties of Fuchsias are grown and each season brings some new varieties into the field that surpasses all its predecessors, only to be themselves eclipsed in their turn. The soil best suited for the culture of these plants is a mixture of half good yellow loam, the other half well-decomposed manure and good leaf mould, to which may be added a portion of sharp river sand. Fuchsias may be propagated by seed or cuttings; the former will give fresh varieties, but the latter is the system which all growers adopt to maintain their stock, either for home decoration or public exhibition. The cuttings should be taken off about the beginning of March (from old plants which have been placed in heat to induce them to push out young wood), and placed in a gentle hot bed. When rooted, which they very quickly will be, pot them singly in small pots, and keep them growing in a gentle heat until they may be removed to the greenhouse, where they should be kept near the glass, and receive larger pots as the old ones become filled with roots. The pyramidal form is that in which these plants are most generally grown, and it is one in which the beauty of the flowers are seen to the greatest advantage. To keep the plant in good form, the leading growth must be kept well up above the laterals, and the plant frequently turned round should it show any inclination to draw to one side; the lateral shoots must be pinched in order to keep a proper balance, and to form a dense and shapely pyramid. Thus grown, they form delightful objects in the greenhouse; indeed a Fuchsia, when well bloomed, either a large or small plant, is an

ornament in any place. After blooming they begin to look yellow, and then comes the critical time in Fuchsia culture in the Southern States. We find it extremely difficult to "Summer" Fuchsias, and even with great care a good many of them will not live through the Summer in this section. The best plan is after they are done blooming and commencing to lose their leaves, is to remove them to the coolest and most shady position about your place, cover the tops of the pots with moss as a mulch to help keep the roots cool and moist. When in this state they do not need much water as they are not growing, but must not be allowed to become dust dry. When frost comes remove them to a cool dry place, such as a shed, a cellar, or beneath the bench in the green house. When wanted to start them shake every particle of soil from the roots, cut them back a little and pot in small pots, shifting them to larger ones as they grow and make more roots, as there is nothing the Fuchsia dislikes more than to be pot bound; give them good sized pots, plenty of water, keep the foliage scrupulously clean by continual syringing and you will have no trouble in raising fine plants. They do not like strong sunshine, a partly shaded position suits them best. In some portions of the South and in California where the Fuchsia stays out through the Winter, they attain a large size, and in this case require but little attention. In England and Wales the Fuchsias are cultivated with very little trouble, the climate there seems particularly suited to them. Fine old plants are to be met with in all the plant houses and conservatories in wonderful perfection. Many of them are very old and have large stems from eight to twelve inches in diameter, and their branches are trained over the roofs of the conservatories, so that when they bloom the thousands of pendants that hang from every rafter

is a handsome sight. In portions of Wales and on the Island of Wight the Fuchsia may be found trained against many a cottage wall where they grow on undisturbed for years and make beautiful ornaments. The varieties of Fuchsias are so numerous that we will only give names of a few of the leading kinds. With many people the double varieties have precedence over the single ones, as it is in most other plants for some unaccountable reason many people want them double. The blooms of the double Fuchsia are larger and more showy, but they lack the gracefulness of the single sorts; also the single varieties grow more freely and make finer and handsomer plants than any of the double varieties. If asked to name half a dozen of the best double varieties in cultivation to-day we would name as follows: Mrs. E. G. Hill, Rosains Patrie, Phenomenal, Perle Von Brunn, Esmeralde and Storm King. For the best six single we would name Mons. Thibaut, Black Prince, Speciosa, Annie Earl, Mazeppa, and Rose of Castile.

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### CALCEOLARIA.

**T**HIS genus may be divided into two sections, the Herbaceous or Florists' Flowers, and Shrubby or Bedding kinds. Seeds of the Herbaceous kinds should be sown in August, in pans well drained and nearly filled with rough turfy loam, making up the surface with fine sifted mould and sand. Water the soil with a fine sprinkler, and immediately sow the seed, no covering of earth being required. Place the pans under a glass or in a cold frame and carefully exclude them from exposure to the sun.

When the seedlings are strong enough, prick them off into pots, and place them in a close situation. When large enough pot off singly, and put them upon a shelf near the glass in an airy greenhouse. Raising plants from seed every year is far preferable to increasing the stock by cuttings. The Herbaceous Calceolarias we now have in cultivation is so very fine, that it is labor wasted to trouble with cuttings, as the great majority of the plants from a batch of seed will prove all that can be desired. The soil for growing them should be composed of three parts rich light loam and sand, about two parts good leaf mould, and the remainder well decayed sheep manure. When well grown they are very ornamental, and serve to decorate the greenhouse and conservatory just at the season the hard-wooded plants are failing; consequently they are of double value. They are subject to attacks of Green Fly, which must be destroyed by fumigation as soon as it appears; and if the plants are kept in a dry atmosphere at a high temperature, Red Spider and Brown Spot will disfigure them very rapidly; therefore care must be taken to keep them in a cool, moist, airy situation. The Shrubby kinds are more compact and hardy, and although they are serviceable to some extent for in-door decoration, their chief use is for bedding purposes. They will not, however, do much as bedding plants in the South, our Summers being too warm for them, and it is only through the Fall, Winter and Spring months that the Herbaceous sorts can be raised in greenhouses with any degree of success, and then with much care and watchfulness. It is only where parties have plenty of time to experiment and are usually successful with flowers that their growth should be attempted; amateurs and inexperienced flower raisers would be sure to fail with them.

## CINERARIA.

**T**HIS is a genus which comprises greenhouse and hardy species. With none of these, however, shall we deal in this place, but shall confine our remarks to those varieties grown as florists' flowers, the origin of which is very doubtful. Like the *Calceolaria*, many varieties are named, and are perpetuated by cuttings; but as a batch of seedlings from a good strain will produce almost every shade of color, the amateur could employ the extra care and attention which cuttings require with greater advantage. *Cinerarias* require a good rich soil to grow them well; we have found that a compost of turfy loam, fibrous peat, good leaf mould, and well decomposed manure, in about equal parts, will suit them well, if a moderate share of sharp sand be added to the whole. The same treatment as that recommended for sowing *Calceolarias* will answer in this case; but where plants are required for Winter flowering, the seed must be sown in April or the beginning of May, and if for Spring blooming, in July and August. The *Cineraria* succeeds best when grown in a frame or pit, even in cold weather, of course excluding frost from them. They are fast-rooting plants, and should never be allowed to suffer from want of room; for if such is the case the foliage will be small and deformed, and the trusses of bloom thin and poor. The Green Fly is a great enemy to the well-doing of these plants; it must be kept down by frequent light fumigations, for on no account may *Cinerarias* be subjected to a heavy smoking, or the remedy will prove as bad as the disease.





Cineraria.

## CHAPTER XV.

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### ALOYSIA CITRIODORA.

**T**HIS is the Lemon Scented Verbena or the Lemon Trefolium that every lady and school girl is quite familiar with, and is most popular on account of its delicious perfume. It is very useful for bouquets and to mix in any way with cut flowers. It delights in a rich loam and leaf mould, and as the shoots are continually being cut, it is not so apt as many other plants to grow too vigorously. It is a deciduous plant and should be kept partially dry during Winter. The flowers are small and of a pale purple color, and of no beauty whatever, all its charms being in its perfume. The leaves when dried will retain its odor for many years. It is a native of Chili. It is propagated by cuttings, the best plan being to put a few of the old plants in heat in the early Spring months, so as to induce them to make young growth. As soon as the young growth is large enough, say two inches long, it may be taken off and inserted in the cutting bed, where it will root freely.

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### HOYA.

**M**ORE popularly known as the Honey Plant or Wax Plant. It was named in honor of Thomas Hoy, an English gardener, and was introduced from Asia in 1882. The most common species, Carnosa, has curious wax-like flowers, from which drops a sweet, honey-like juice. It

is a greenhouse climber, which requires a light rich soil, and is propagated by cuttings, which require an average temperature of not less than 75° to root freely. It is sometimes grown in greenhouses, in a warm situation, exposed to the sun. It makes an excellent plant for a warm sitting-room, as it grows freely without direct light. It stands the Winters in the Gulf States, where it is very popular.

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### PRIMULA.

A Primrose by the river's brim,  
A yellow Primrose was to him,  
And it was nothing more.

**A**LL this genus of plants are most interesting and popular with everybody. It is so much associated with the literature of the present day that it can never be forgotten. There are three distinct classes, namely, the Auricula, the Polyanthus, and the Primrose. Neither of the first two species are much known in the South, hence our remarks will be confined to the variety *Primula Sinensis*, though the original variety has pretty much been lost sight of, and only the superior varieties, which have been obtained by careful selection from the species *Sinensis*, are much grown in American gardens to-day. They are now the most popular Winter and Spring flowering plants for greenhouse or room decoration. In fact we know of no plant that does better in an ordinary parlor or living room than the Chinese Primrose, which well merits the title it has obtained of "Everybody's Flower," and is so well known that a description of the plant is almost unnecessary. The leaves are fleshy, with sinuated edges and hairy surface; in the original plant, introduced now many years since, the flowers were small,

white or pale lilac in color, and the edges of the limb quite smooth, with a terminal notch in each segment. Another variety with slightly fringed edges was afterwards introduced, and from these, through the efforts of cultivators, have sprung the beautiful forms now to be seen in gardens. Some flowers of these varieties measure two inches and a half across the limb, the color a clear magenta, and deep orange eye, beautifully fringed at the edges; the white variety is equally large and well fringed, the pure white prettily contrasted with the rich orange-colored eye, and they have the good property of forming tolerably long flower spikes, so that all the blooms stand well up above the foliage. The fern-leaved varieties are also very handsome, and produce very fine flowers of various shades; and it frequently occurs that some fine double-flowered forms are also produced in this way. The seed should be sown upon some leaf mould and well decomposed manure, in pots filled to within about half an inch of the top; the surface of the soil should be left somewhat rough, and the seed sprinkled upon it, and instead of covering with soil, tie a piece of paper over the pot, and place in gentle heat. The paper only should be watered; this will give sufficient moisture, and prevent the seeds being washed away, and will not subject them to the sudden extremes of drought and moisture, which is so fatal to these plants at the time of germination. In about three weeks the seeds will have germinated, after which the seed pots should be removed to a shady place and the paper removed, and, when the plants are large enough, potted into separate pots, and gradually subjected to cooler treatment, until they can be placed in a greenhouse or pit close to the glass, and moved into larger pots as their growth demands it. It is, however, not advisable to give them too much pot room, as they



Primula Obconica.



flower more freely when slightly pot bound. By placing them in a cool, moist position through the Summer months they may be kept over to flower the next Winter and Spring, but will never have as healthy appearance or as large blooms as young plants raised from seed. They may also be raised from cuttings if necessary, but being so freely produced from seed, the cutting system is not often carried on except in the case of the Double White Primrose; as this does not seed freely, it is most generally propagated by cuttings. The leaves of the Primrose are very easily broken, and on this account do not like to be moved or shifted around much. As soon as they attain a fair size, put them where they are intended to bloom and do not further disturb them.

#### PRIMULA OBCONICA.

This may be classed as one of the most useful flowering plants grown for greenhouse or room decoration. Its flowers are of a pale lilac or Heliotrope color, bearing large clusters of flowers well above the foliage, and is continually in bloom, for which reason it is often referred to as the Everblooming Primrose. It delights in a cool temperature, and is much more hardy than any of the varieties of the Chinese Primrose. It does well in the open border during the Summer months if given partial shade. It is chiefly raised from seed; if sown in the early Spring the seedlings will begin to bloom in May or June. It has a hard wirey stem unlike the other Primrose, and for this reason is valuable for bouquets or floral work, for which purpose it is much used. The same treatment as for the Chinese Primrose will suit for the seedlings, but will do with much less heat. *Primula Vulgaris* is very common in the British Isles; it is of a pale lemon color, and is to be found growing by the road sides and on every

hill and dale, and it is this particular species we believe the poet had reference to when they dubbed it "The Pale Primrose," or "The Firstling of Spring." Its English appellation is derived from *Primus*, the first, and happily expresses one of its charms, and shows why it is such a meet emblem of youth.

Of maiden modesty and tender truth  
The Primrose is the type, as 'tis of youth.

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### CLERODENDRON.

IT is difficult to conceive more beautiful objects than several members of this genus when well cultivated. Cuttings taken off any time during Summer root readily, or in Winter in gentle heat, and should be kept in small pots through the succeeding Winter, on a shelf or underneath a bench in the greenhouse. About the 1st of February repot them, giving them a liberal shift. The soil should be light and very rich. To flower freely they require frequent shiftings from smaller into larger pots. With this treatment they can be made to bloom continually during the entire season. Old plants can be grown on with occasional shiftings, and make splendid plants for garden decoration during Summer. They must, however, be grown in the shade. After flowering water freely, in order that they may make a good growth; after which they should have partial sun to ripen the wood. If not wanted for Winter flowering, remove the plants in the Fall to a light cellar, free from frost, giving them through the Winter just enough water to sustain life. In the Spring, when all danger from frost is over, remove the plants to any desired position in the garden or on the veranda for another season of bloom. *Balfourii* is the best and most showy variety, and one

we have seen in full bloom a number of years in succession, with the above treatment. It makes a valuable climbing plant when so desired. In the Gulf States it stands the Winter and makes a beautiful vine. A cutting back in the early Spring before it begins to make new growth is about all the treatment it needs when grown in this way. The shrubby varieties make handsome plants when in bloom, but are not much known in the South. They are natives of India and some few are from Sierra Leone.

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### CYCLAMEN.

**T**HIS genus contains a great many of our most popular plants for Fall, Winter, and early Spring flowering. They are all neat and dwarf in habit; all have foliage of pretty form and beautiful markings, and the flowers in every case are beautiful, some exquisitely so. *Persicum* stands at the head of the family, and is the one in most general cultivation. The Cyclamen should be grown from seed, which should be sown as soon as ripe in pans or shallow boxes filled with a compost of well rotted manure, leaf mould, and coarse sand thoroughly incorporated. As soon as the plants have made two leaves, prick out, at one inch apart, into similar pans or boxes filled with the same compost, and place upon the shelf in the greenhouse, near the glass, and shade from direct sunlight. Carefully water; to dry them or drown them is equally fatal. As soon as the plants are well rooted, shift into a three-inch pot, observing the same instructions in all respects. By the first of September they will require a five-inch pot. With proper care and attention, they will be in flower from November through the entire Winter months. They require a more even temperature

than is usually given to greenhouse plants, not above 60° nor below 50°; with it bulbs two inches in diameter can be grown in one year. After flowering they should be gradually ripened off, but never allowed to become thoroughly dry. During Summer keep them in a frame, shaded, and give occasionally a little water. They should be repotted again about the first of September, without breaking the ball, and the next flowering will be their perfection of bloom. This species is a native of Persia. All this species are famous for their acridity, yet in Sicily the Cyclamen is the principal food of the wild boars; hence the common name Sow Bread.

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### LANTANA.

**A** genus of plants producing an abundance of gay flowers, but having strongly scented foliage, the peculiar tone of which is not grateful to most people; hence they have not been popular. Lantanas are rapid growers, and will soon form large specimens; and wherever space can be given, a few should be grown for the sake of their bright colored and abundant Summer and Autumn flowers. They should be potted in loam, peat, and sand, in equal parts. As bedding plants all through the South they are most extensively grown, and make a fine display in the flower garden, being most constant bloomers, and do well in a sunny position. They were first introduced from the West Indies in 1692. They are all readily increased by cuttings.

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### POINSETTIA.

**A** N old plant in gardens now, but one which is admired whenever it is seen in a well-cultivated state. The end of May or beginning of June is a good time to get

the old plants started. The soil should be fibrous loam, peat, and leaf mould, with a good share of sand. They should be grown in pots if intended for greenhouse decoration in Winter, as they will not stand moving when in vigorous growth. In the extreme South they stand out all Winter, and make cheerful objects in the flower garden. When cultivated in pots, as soon as the bracts begin to drop and the leaves fall off, water must be withheld from them gradually and eventually allowed to dry off and rest in a dry state for a couple of months, when they may be completely shaken out of the old soil, put in fresh soil in small pots, and shifted on as the growth demands it into larger ones. The young shoots it makes after commencing growth will root freely in an ordinary propagation bed. They are always at their prettiest at Christmas, and are more prized on this account, besides at this season their bright colors are so remarkably attractive among other plants.

#### POINSETTIA PULCHERRIMA PLENISSIMA.

This was introduced as the new double Poinsettia. There is, however, very little double to it, but it lasts in a state of perfection longer, and has a brighter green foliage, than Pulcherrima, and is therefore a very desirable variety.

#### POINSETTIA PULCHERRIMA.

This plant is a native of Mexico, and is one of the gayest of all our Winter decorators. It may be grown from eight to nine inches to several feet in height, and forms an extremely ornamental object, the large bright scarlet bracts resembling the green leaves in form and size, contrasting strongly with the features of every other plant with which it can be associated.



## POINSETTIA PULCHERRIMA ALBA.

This variety resembles the species in every respect, saving that the color of the bracts is white, instead of scarlet. Though not so showy as the more highly colored form, it is yet well deserving a place for the pleasant contrast it affords.

## STEPHANOTIS FLORIBUNDA.

**T**HIS plant is a native of the Island of Madagascar and was introduced to British gardens about fifty years ago. It soon attracted attention and became a favorite as a greenhouse climbing plant. The exquisite odor and snowy whiteness of its flowers, combined with their shape and size, render them great favorites with the ladies. It is not generally cultivated in the South, only occasionally a plant is to be met with. It is very much subject to an attack of the Mealy Bug, and to keep it in good health they must be sponged off as quick as they appear. The soil it succeeds best in is a mixture of good fibrous loam and peat, with a little sand and decomposed manure added. It is propagated by cuttings, and will stand the Winter in the Gulf States. For a climbing plant for a small greenhouse it has no equal, and should be more extensively grown. It may be grown in pots and trained on a trellis if desired, but it attains its finest state of perfection when planted in the border in a greenhouse and the shoots trained to the rafters.


## PLUMBAGO.

**T**HIS is about one of the best known plants in the Southern gardens; every lady wants a Plumbago, just the same as she wants her Lemon Trefolium or Galla

Lily, and it has a place on every porch or yard where flowers are cultivated at all. The variety *Capensis*, which is a pale blue, is most extensively grown. They are natives of Europe, Asia and Africa. Three of the class are worth growing as greenhouse or pit flowers, namely, *Capensis*, *Rosea* and *Alba*. The variety *Lar-pentæ* has deep azure blue flowers, flowering from September to November, and is perfectly hardy. They are easily propagated by cuttings of the roots or shoots, or by division of the plant. With the exception of *Lar-pentæ*, the others are not hardy here. It was introduced in 1818. If required only for Summer blooming on the lawn, they may be Wintered safely in a shed or cellar, where they will require but little water until necessary to start them in the Spring.

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#### AGAVE.

 AGAVES are most commonly known as the Century Plant or American Aloe. These plants are a native of South America, and were introduced in 1640. There are a great many varieties of this plant, but only the two varieties, *Americana* and *Americana Variegata*, are much known in the South. The latter has its leaves beautifully streaked with white and yellow and makes a most ornamental plant for a vase or sunny position, as they stand the drought and the hot sun better than any other plant we know of. It was at one time a prevailing idea that this plant only flowered once in a hundred years; but this is found now to be a popular error. If given sufficient heat, it will flower when ten or twelve years old. The flower stem rises from the center of the plant to a height of about thirty feet, bearing an immense number of yellowish-green flowers, after which the plant perishes.

New plants are formed around the base of the old one in the form of suckers. It furnishes a variety of products; the plants form impenetrable fences; the leaves furnish fibers of various qualities, from that used in the finest thread to that in the strongest rope cables; the juice, when the watery part is evaporated, forms a good soap, and will mix and form a lather with salt water as well as fresh; a very intoxicating drink is also made from the juice, as well as other preparations of a similar nature; the leaves are made into razor strops, and are also used in scouring all sorts of culinary utensils.

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### CACTI.

**T**HE Cactus family contains many of the most singular and grotesque productions of the vegetable world. The flowers of many of the species are the most gorgeous; of others, the most delicate and beautiful known to botanists. Of distinct and striking forms there is no end in this strange family. The *Cereus Tuberosus* has slender, graceful stems, hardly half an inch in diameter, while the *Cereus Giganteus* towers to the height of fifty feet, a gaunt, wierd column two feet in diameter, rising like a giant telegraph pole out of the sands of the Mexican desert. The pretty little *Mamillaria Micromeris* is a top-shaped plant, three-quarters of an inch in height and half an inch in diameter, covered with a delicate lace-work that might have been woven by fairy fingers, while the *Echinocactus Lecontei* thrusts its sturdy form from out the crevices of rocks, a solid globe more than three feet in diameter, armed with stout, forbidding thorns several inches in length. Nearly all the species are found in exposed situations in a country where not a drop of rain falls for months at a time; hence, in cultiva-

tion, they require little care, will endure any amount of ill treatment and will thrive and bloom where other plants starve. The plants themselves are a bright, living green, Summer and Winter, while their individuality is so marked, and their manner of growth so curious and unique, that no one who has ever cultivated them can fail to appreciate and admire them. There is no trouble whatever in their propagation, no more than there is care in their culture. Some few of the varieties have the peculiarity of blooming at night; *Cereus Grandiflora* is commonly known as the Night Blooming Cereus. They present such a diversity of form, and such beautiful flowers are produced from such scrawny plants, as to always make their cultivation interesting.

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#### ABUTILON.

**M**OSTLY called Fairy Bells. They are an interesting class of plants, and are suitable for either the flower garden or greenhouse. Nearly all are vigorous growers and produce freely handsome bell-shaped flowers of white, rose and yellow. Some varieties have variegated foliage, as in *Thompsonii*. There was a new variety introduced a few years ago having double flowers, but in our estimation it is not as pretty as the single flowering sorts. *Boule de Neigh* is the best white, and *Golden Fleece* the best yellow. There are many shades of red and rose. All are easily propagated from cuttings.

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#### ACACIA.

**W**HO has not heard of the "Sprig of Acacia" that so easily comes up by the roots? They are an extensive group of really handsome plants, many of them



Abutilon.



assuming in their native positions the character of timber trees, but in this country their most vigorous growth is easily accommodated in a good sized greenhouse, where their bright yellow flowers are very ornamental. They are chiefly natives of New Holland, a few being found in the East and West Indies. The cuttings do not root freely, and are best raised from seed.

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### ACHIMENES.

**O**NE of the finest of modern introductions, the whole of the species being splendid Summer ornaments of the greenhouse. Flowers of all shades, from white to crimson. The scaly buds or rhizomes require to be kept perfectly dormant in Winter, and about January to be potted in light loam and leaf mould, plunged into a moderate hot bed, and encouraged with a warm, genial atmosphere. When they have attained a few inches in height they may be placed several together in a shallow pan, or repotted separately, and by the end of April gradually inured to the temperature of the greenhouse, where they afford a blaze of beauty the whole of the Summer. They are mostly natives of Mexico and Guatemala, though a few have been received from the West Indies.

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### ALONSOA.

**T**HE Mock Flower. The species are low under shrubs, or herbaceous plants, natives of Peru, and two of them, *Incisifolia* and *Linearis*, are very ornamental, either in the greenhouse, or grown as annuals in the open border during Summer. They thrive well in any light rich soil, and are readily increased by seeds or cuttings. They




Achania Malvaviscus.

are very desirable for flower gardens, on account of the brilliant scarlet of their flowers; and where there is no greenhouse, the plants should be raised from seeds sown on a hot bed in February, or struck from cuttings early in Spring, and brought forward in a frame or pit, and turned out in the open air in March.

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### ACHANIA MALVAVISCUS.

 NATIVE of South America, Mexico and the West Indies. It is not hardy in this latitude, but in Florida it grows to very large size, and when in bloom is most ornamental. The flowers resemble that of the Abutilon, but are not as large, although produced more freely. It is remarkable for the beauty of its scarlet flowers, and its green heart-shaped, sharply pointed leaves. It is easily propagated from cuttings, and is suited to either the greenhouse in Winter or the flower garden in Summer.

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### ANTIRRHINUM.

**T**HIS is commonly known as Snapdragon, and are natives of the middle and south of Europe, and of which one species, *Majus*, the common Snapdragon, is in every garden. All the species of Snapdragon grow in any soil that is tolerably dry, and they are readily increased by cuttings; for though they produce abundance of seeds, yet the varieties can only be perpetuated with certainty by the former mode of propagation. The beautiful Carnation-like variety will, indeed, very seldom produce striped flowers two years in succession from the same root; and thus a person who has purchased a plant with beautifully striped flowers will generally have the

mortification, the second year, of finding it produce nothing but flowers of the common Snapdragon, unless cuttings have been made from the young shoots of the plant, and the old root thrown away. As this plant, in its wild state, is very commonly found growing on the tops of old walls, it may be considered as one of the most ornamental plants for placing in such a situation.

### AZALEAS.

**T**HIS superb genus of highly ornamental plants is deservedly a universal favorite, the varieties being alike useful for the decoration of the dining table, the sitting room, the hall, the greenhouse, or even the open border. They are of easy culture, and may be readily forced into bloom by being placed in a warm house; they may consequently be had for home decoration from Christmas to May, if a tolerable collection of them is kept up. They are such general favorites that many hundred varieties of them have been introduced to cultivation, and many persons devote themselves entirely to the raising of new forms, by hybridising and cross breeding. Azaleas are among the most useful of all plants for cutting for bouquets. The plants will indeed stand more cutting than most hard-wooded subjects; and after the bloom is off, if they are placed in heat and kept well syringed, they will make a fine new growth, and become again completely furnished. After blooming, the plants, except in the case of very large specimens, should be repotted. The large plants will probably not require potting for several years, and must have some weak liquid manure applied to them occasionally. When the growth is completed the temperature must be gradually lowered, until they can be removed outside to ripen the wood and swell up

the flower buds. In the Autumn they must be removed into the greenhouse before frost sets in. The soil best adapted for them is three parts goods fibrous peat, one part light loam, one part leaf mould, and one part sand; and it is very important that the drainage should be maintained in good condition. The propagation of Azaleas is effected by cuttings and by grafting, both operations being very easy; in fact, the scions of these plants are amongst the easiest and quickest to form a union with the stock of anything that I know. The variety Deutch Perle, with handsome double white flowers, is a desirable acquisition for Christmas blooming. There is such a large variety of this class of plants, that we will not attempt to name any of them in preference to others. Natives of China. There are several handsome sorts that are natives of America.

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### BRUGMANSIA.

**F**ROM the trumpet shaped appearance of the blooms this plant is sometimes called "Gabriel's Trumpet." In the Southern gardens they attain a fine size and are very ornamental. They are Peruvian shrubs. *Suaveolens*, better known by the name of *Datura Arborea*, and *Sanguinea*, are magnificent species. Being large plants, growing to the height of ten or twelve feet, they look best when planted in the ground in a conservatory; but they will grow well in large pots, or they may be planted in the open garden in the Summer season, and taken up and preserved in a back shed, from which the frost is excluded, during Winter, to be replaced in the open border the following Spring. The flowers are a foot or more in length and very fragrant. The plants grow freely in





**Bouvardia Alfred Neuner.**

light, rich soil; and they are readily propagated by cuttings either of the shoots or roots.

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### BELETIA TANKAVILLA.

**T**HIS is what is called the "Veiled Nun," and is a very pretty, tuberous-rooted, terrestrial Orchid, which requires to be grown in pots of fibrous loam and leaf mould, and produces large spikes of shaded purple flowers. A somewhat high temperature, say 70° or 75°, with plenty of moisture while they are growing, and a considerable reduction of both as soon as it is completed, is necessary to cultivate them in perfection. They are increased by means of offsets. Introduced from Mexico in 1822.

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### BILBERGIA.

**M**OST handsome plants when well grown. The colors of the flowers are at once rich, vivid, and delicate, and are usually contrasted in the highest manner by the equally bright tints of the colored bracts. They should be grown in pots of rich loam plunged into an active hot bed until the growth is completed, when a cooler and drier place, as on a shelf in the greenhouse, will induce them to flower freely. Propagated by suckers. Introduced from Brazil in 1825.

### BOUVARDIA.

**T**HIS is a most valuable group of Winter blooming plants for greenhouse decoration or for cut flower work. The original varieties are natives of Mexico, but all the sorts in cultivation to-day were raised in this




**Dracæna Terminalis.**

country, chiefly by sports. The flowers are very graceful and are highly admired through the Winter months, at which time they are at their best. They are best propagated by root cuttings. As soon as they are through flowering take them up and cut all the strong roots away, then cut them in small pieces about one inch long and cover them in the sand in the propagating bed, and each piece will start to grow and make a nice plant. As soon as about one inch tall, take them from the sand and pot in small pots, and gradually shift on as desired to larger pots. Plant them out in April in a rich, well prepared place, and keep watered through the Summer. They must also be pinched and cut back a little to keep them a good shape. About the end of September they must be carefully lifted and set in the greenhouse or pit in the place they are intended to flower. After moving them in the Fall they will need frequent sprinkling and shading from the bright sun to keep them from wilting. Alfred Neuner is the best double white, President Garfield the best double pink, but in our estimation the single ones are by far the prettiest. Bockii is a grand single pink variety, and President Cleveland the finest scarlet crimson, and Vreelandii one of the best whites.

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#### DRACÆNA.

 FINE genus of plants. The Dracænas are amongst the most useful and beautiful of fine foliated plants, partly owing to their noble but graceful habit, and partly owing to the colors which the leaves of many species assume. The grand additions that have been made to this genus of late years by importation and hybridizing is something wonderful. They are easily grown in a mixture of two parts peat to one of loam, with good

drainage, and a fair amount of pot room. For ornaments for the parlor, for the porch, or for a large vase on the lawn, nothing has the fine appearance of a well grown *Dracæna*. The variety *Terminalis* is a native of the East and West Indies, and is most popular in this class, the vivid coloring of its leaves rendering it at all times attractive. Nearly all the species are admirably adapted for decorative purposes. For the sub-tropical garden or for the lawn, *Indivisa* is the best, being of graceful habit, rapid growth, and not affected by sunshine, storm, or drought. This species is a native of New Zealand, and is readily increased from seed. The other species are propagated by placing the stems on the propagating bench in sand, with a bottom heat of 75°, and covering about one inch in depth, which should be kept at all times moist; in a short time an eye will break forth from nearly every joint. The most forward of these may be removed from the stem from time to time, which will soon strike root in sand with bottom heat. The old stem should not be removed until its reproductive powers are exhausted. The species are pretty generally distributed throughout all tropical and sub-tropical countries, and were first brought to notice about 1820.

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### COLCHICUM.

**A**LSO called the Meadow Saffron, and is a hardy bulbous rooted plant, which will grow well in the border. The flowers come up through the ground without the leaves in Autumn, and closely resemble those of the *Crocus*. The leaves do not appear till the following Spring, and great care should be taken of them, as, if they should be injured so as to prevent them from exer-



rising their proper functions in maturing the sap, the bulb will not flower the next Autumn. The class are universally poisonous.

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### FANCY LEAVED CALADIUMS.

**A** GENUS of highly ornamental plants, of very easy growth. The greater number of the species are deciduous, and therefore occupy but little space during the Winter months, which is a great advantage, as at that season of the year most amateurs find their plant houses rather crowded, because then all tender plants must have protection. Caladiums require to be potted in turfy loam, peat, leaf mould, and well decomposed manure, in about equal parts, adding some river sand. The size of pots, and number of shifts necessary, must be entirely regulated by the size of the specimens required; if only small plants are needed, then plant them in less rich compost and keep them in small pots; but if size is the object, then it is scarcely possible to be over liberal with them. We have had a great number of new forms of these plants during the past few years, many of them exquisitely colored, but in most instances they are but variations of some previously known kind. After the beauty of these plants begin to fade, less water should be given, gradually decreasing the quantity until it is entirely withheld. By this time the foliage will all be dead and the roots at rest, and we wish particularly to warn amateurs respecting their treatment at this period. It is the common practice to stow them away upon shelves, quite dry, and thus they remain for several months—that is, until the Spring. Now it frequently happens, that when the bulbs are turned out for potting at this season, nothing but the outside shell remains;

this is what we designate dry rot, and to steer clear of this evil, we advise their being kept in some warm place where water can be given occasionally. In this way even the smallest-rooted kinds will be found whole and sound at the potting season. They are increased by division of the roots, which is most safely accomplished before growth commences. Many kinds have been introduced from Para, and other parts of South America, and others are the results of cross-breeding at home; but although many are introduced, they probably are cross-breeds in their native country, which is Tropical America. These can also be set out on the lawn in Summer in rather shady positions, and make most ornamental beds. They never get to be of much size; the odd and beautiful coloring of the leaves is all that there is to recommend them.

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### CORONILLA.

 genus of pretty annual and perennial plants found in Europe, Asia Minor, and North Africa, but in the greatest abundance in countries bordering on the Mediterranean Sea. Several of the greenhouse species are very pretty flowering shrubs of easy culture. *Glauca* produces its bright yellow, pea-shaped flowers in abundance during the Winter. Propagated by cuttings or from seeds, which ripen freely. The species have been long under cultivation.

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### CAMELLIA.

**T**HIS magnificent genus of evergreen shrubby plants was first introduced about the year 1739. The varieties then sent were *Japonica* and *Anemoniflora*, the latter

perhaps better known under the name of Red Waratah. Both were introduced from China, where they are great favorites with the inhabitants, the varieties being planted by them very largely in their groves and gardens, where they yield a profusion of gay flowers from October to the beginning of May. The plant has become such a universal favorite with all horticulturists, that we have come to look upon it as a plant of our own, and not an introduced one. The genus *Camellia* is nearly related to *Thea*; indeed, by some authorities the latter is merged into *Camellia*, so that one might invite one's friends to drink a cup of *Camellia*, instead of a cup of tea; it is, however, well known that the leaves of *Sasanqua* are used in China to mix with some of the select kinds of tea, to give them a superior flavor. *Camellias* are universally admired for the rich and pleasing contrast afforded by their dark green leaves and their superb double flowers, which latter enliven our greenhouses and conservatories throughout the Winter and Spring months. And in the lower States, where they stand out all through the Winter, they make cheerful ornaments in December and January. In Florida, Louisiana and Alabama some large plants are to be met with in old gardens, and judging from their fine vigorous appearance, are entirely at home in the climate of these States. The flowers are also extensively used for bouquets and for dressing ladies' hair, for balls and parties; indeed, the want of fragrance is perhaps the chief thing which prevents the *Camellia* from supplanting the *Rose* in universal admiration. The soil best adapted for *Camelias* is a mixture of about equal parts good turfy loam and peat, with a liberal addition of sharp sand. We consider the best time for repotting is just when the young growths begin to start; some growers object to this operation

being performed until the blooms are all past, but it has always seemed to us the most natural to give fresh nourishment to the young wood at the time it can be used with the greatest advantage, even though it be at the sacrifice of a few flowers. After potting, the plants must be liberally supplied with water, both to the roots and foliage. The growth being complete, water more sparingly, while more air is permitted, in order that the plants may be hardened off, preparatory to being stood in the open air to thoroughly ripen their wood and swell up the flower buds. If very large flowers are required, each shoot should be allowed to carry but one bud, though in other cases two or more buds may be left, according to fancy. In the Autumn the plants must be removed in-doors again, and care must be taken that the watering is carefully done. The Green and Black Fly attack the young growths and flower buds, but as fumigation with tobacco will easily kill them, they should not be allowed to remain long enough to do any injury. The white scale sometimes makes its appearance, and this must be at once washed off with warm water and soft soap. If occasionally sponged with a little soap and water, it will give the foliage a beautifully glossy appearance and greatly add to the health and vigor of the plant. This is only necessary where grown for greenhouse use, as where grown in the open air in the far South the rains always keep them clean, and they require no more attention than any ordinary tree when grown in this way. There are so many beautiful sorts we will not attempt to name any of them, for all of them possess decided charms for all cultivators.

## CHAPTER XVI.

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### CALADIUM ESCULENTUM.

**W**ELL known as "Elephant's Ear" in all the gardens of to-day, and is a truly majestic plant. Its leaves attain the size of from three to four feet in diameter, and is a favorite plant for single specimens on the lawn. If freely watered and given a rich deep soil, it will be an object of beauty wherever planted. This species is grown extensively in the Sandwich Islands for food, and is called by the natives Tara, the roots being eaten like potatoes and the leaves cooked like spinach. It is propagated by offsets from the main root. As soon as frost destroys the leaves the plants should be taken up and exposed to the sun to dry. As soon as all the leaf stalks fall away from the bulb, they may be stored away in a cellar or dry place until Spring.

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### GLOXINIA.

**T**HE Gloxinia has now become a very numerous and popular flower. We have hybrid varieties with pendulous flowers, with erect flowers, and with semi-double flowers, and of almost every shade of color. Any one may, however, obtain handsome fresh varieties by purchasing a packet of seed from some good strain, and sowing it in some fine soil, and placing it in heat. The culture of the Gloxinia is very simple, and like the Achimenes, it especially recommends itself to those who



have but limited space, as the roots can be stored away on cool shelves in Autumn, so as to make room for the Winter-flowering plants. The soil best suited for these plants is a mixture of fibrous peat, leaf mould, and well-decomposed sheep manure, with a very liberal addition of sand. If a succession of bloom is required, some of the tuberous roots should be potted in January, and successional batches in February and March, and these will yield a good supply of flowers. They should be watered liberally but carefully. Some growers recommend syringing, but we prefer keeping a very moist atmosphere for them in preference. When the flowers are past, and the growth is nearly finished, they may be stood in the open air to ripen well before Autumn, but must be protected from heavy rains; and when they are quite ripened they must be stored in their pots, in some moderately cool dry place, until again wanted for potting.

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### CROTON.

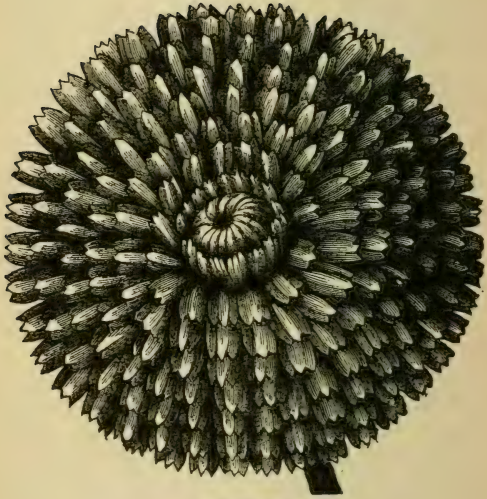
**A** genus of beautiful ornamental foliage plants. *Tiglicem* is the species from which the Croton oil, a powerful purgative, is obtained. They are nearly all natives of the East Indies, and were first introduced in 1748. They are all handsome plants, and are of very easy culture. There have been many fine species added to this class within the last few years. When growing they delight in strong moist heat; and in order to produce the rich golden color in the leaves, to which they are indebted for so much of their beauty, they require to be placed close to the glass. As large specimens, either for public exhibition or for decorations, Crotons are indispensable, for their habit and color produce an effect which is not

yielded by any other plants. They are easily managed, and can be grown into handsome small specimens, and when so grown, are among the finest things that can be used for the adornment of the dinner table, and also for vases for the sitting-room during the Winter months. In Summer they will stand for a long time either in the windows or hall, and for this purpose they should be extensively grown. Crotons succeed well in rich loam, with a little peat and sand added; they require an abundance of water, and therefore must be thoroughly drained. According to some authorities the whole of the plants in cultivation are varieties of one species. They are readily propagated by cuttings with a bottom heat of not less than 75°, and require a high temperature and full sunlight to bring out their beautiful markings.

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### CALENDULA. \

**T**HIS is also known as Marigold, and nearly always has a position in most gardens. There are several species, some of which are shrubby and some annual. The Cape Marigolds are hardy annual plants, with very elegant flowers, which close at the withdrawal of the sun, and as they do not open at all when it is dark, or heavy clouds foretell the approach of rain, Linnæus called the commonest species *Pluvialis*, or the Rainy Marigold. The florets of the ray of the flowers of this plant are of a pure white inside, and of a dark purple on the outside; while those of *Hybrida* are of a dingy orange outside. A tincture is made from the flowers of the several varieties that is considered highly efficacious for bruises or sprains, affording relief more quickly than arnica. All are freely raised from seed, in fact if once they get established on



Calendula:

your place they produce themselves from year to year on the same ground.

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### EUCALYPTUS.

**A**N extensive genus of immense evergreen trees, of the Australian and Tasmanian forests. Globulus, the Blue Gum Tree, has been extensively planted within the past few years in the Southern States and California, for the reputation it has of absorbing malaria. The tree is very ornamental, and furnishes timber of a superior quality. Its rapid growth excites the wonder and admiration of those already accustomed to the extraordinary development of the vegetable kingdom on the Pacific coast. It will be remembered that Australia sent to the World's Fair at London in 1863 a plank from this tree two hundred and fifty feet long. Young plants are readily obtained from seed or from cuttings. The species are not hardy in the United States north of the Carolinas.

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### ECHEVERIA.

**T**HE Echeverias are succulent plants, all more or less ornamental, particularly so when in flower. Some are dwarf and herb-like in their manner of growth, and others more or less shrubby in their habit. They are all free-growing plants, suitable for rockeries, edgings, or massing; where "carpet bedding" is done the Echeverias are indispensable. They require the protection of the greenhouse during Winter, and, like most other succulents, to be carefully watered; in fact, the soil must never approach a soddened condition. They must, however, be freely supplied with water while in a growing condition. The Echeverias are readily propagated by the

leaves, especially those produced along the flower-stem, and by seeds. They require a very open or porous soil, consisting of loam and coarse sand. They are chiefly natives of Mexico. Some of the more popular kinds are of recent introduction. *Echeveria Metallica* makes a most ornamental plant when well grown. The variety *Secunda Glauco* is commonly known as "House Leek," or "Hen and Chickens," and is grown in large quantities for ornamental bedding in all the large parks and gardens of this country.

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### MAHERNIA.

**A** GENUS of neat little shrubs, growing about two feet high, and remarkable for the profusion of their yellow, or red and yellow flowers. *Odorata*, the yellow, is the best known. They are easily grown in the greenhouse with ordinary treatment. All the species are from the Cape of Good Hope, and were introduced early in the present century. They are increased by cuttings. On account of its trailing habit it is fine for rock work or for covering old stumps or unsightly objects through the Summer. In the more Southern States it will stand the Winter. In fact it has lived out here for the past two seasons, but the Winters were very mild.

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### SALVIA.

**T**HIS extensive genus is composed of handsome flowering plants, some of which are hardy and herbaceous, while others are tender, and assume a half shrubby character. They are particularly useful for filling large beds in the flower garden through the Summer, where such kinds as *Patens*, blue; *Splendens*, scarlet; and *Ful-*



gens, red, are very showy. Splendens is a native of Mexico, and was introduced in 1822. It is one of the best for garden decoration. Of Splendens, within the past few years, we have had many singular and beautiful varieties, one being pure white, another scarlet and white striped, and another a distinct crimson color. There are also several beautiful species that were grown in the greenhouse for the sake of their flowers in Winter, but are not much valued now for that purpose. *Officinalis* is the common culinary herb. There is a very pretty variegated variety of this, grown in the border as an ornamental plant. Propagated by seeds or cuttings. The *Salvias* always attain their highest perfection in the Fall months, and the long Falls we have in the South, and absence of frosts, makes them more desirable here on that account. A large bed of *Salvias* in September or October makes a gorgeous display when contrasted with the Autumnal foliage of our gardens.



### CANNA.

**C**ALLED also Indian Shot, and is an extensive and very interesting genus of tender herbaceous perennials. Most of the species have showy crimson, orange and yellow flowers. They are usually grown for the remarkable beauty of their foliage, which is highly ornamental; hence they are favorite plants in cultivation, and produce a striking effect either singly or grouped in beds upon the lawn, in the Summer months. If planted in a rich, deep soil, and freely watered, some of them will grow ten feet during the season, and from a single tuber make a clump three or four feet in diameter. But beauty is not their only claim to consideration, some of

the species, as *Edulis*, being grown extensively in Peru and the Sandwich Islands as a vegetable. Arrow-root is also made from this species. Propagated by seeds, or more commonly by division of tubers, which should be kept during the Winter like Dahlias in this section and in the North. South of this point, however, they may remain in the ground undisturbed and will come up in the Spring. Some new kinds introduced within the past few years have decided merit, namely, *Ehemanni* and *Nautoni*. The variety *Flaccida* is a beautiful little native found in the swamps of Florida and other Southern States, and is one of the most effective of all *Cannas* for gardens. The flowers are from three to four inches long and are of a delicate lemon yellow, with a peculiar crimped or waved margin, giving a most pleasant effect.

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#### PANDANUS.

**T**HIS is an extensive genus of ornamental trees found in the East Indian Islands, and are frequently called Screw Pine. The leaves are imbricated and embrace the stem, bearing some resemblance to those of the Pine Apple, and are from three to five feet long, placed in three spiral rows around the extremity of the branches, which gives it a screw like appearance, hence the name. For a vase plant on a lawn in the South a Pandanus makes a graceful object, and can be used in many other ways with fine effect. The flowers of *Odoratissimus* yield a most delightful fragrance, for which it is largely cultivated in Japan. *Utilis*, which best deserves the name of Screw Pine, is the species most frequently met in our greenhouses, and is perhaps the most valuable of any plant used in decoration, as it withstands gas, dust, and ill usage better than almost any known plant. It is

the most useful in its native country, the Mauritius, where it is not only common, but is cultivated for the sake of its leaves, which are extensively used in the manufacture of the bags or sacks in which sugar is exported. They are increased by seed, or may be propagated by cuttings, the former being the method by which a stock is usually obtained in this country. There has lately been introduced into the greenhouse two very ornamental kinds, *Javanicus Variegata* and *Veitchii*, both with foliage striped green and white. As decorative plants they are exceedingly valuable, both for the greenhouse and parlor. These variegated kinds are yet scarce and high priced. They are increased by cuttings, which root rather slowly; the temperature in which they are propagated should not be less than 75°.

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### PÆONIES.

**T**HE Pæonies are common in all Southern gardens, and are divided into two distinct groups, the Herbaceous and the Tree Pæoney. The Herbaceous Pæonies are well known ornaments of our gardens, where they are great favorites, from their showy flowers, their great hardiness, and their easy culture; all essential qualities for a large garden, and for such only are they desirable. The roots of these plants are composed of bundles of carrot-like tubers, which may be separated from each other to increase any particular species or variety; or the tubers of the common Pæonies may be grafted with shoots of any choice kinds. The tree or shrubby species are chiefly increased by grafting on the roots of the herbaceous sorts. Of the herbaceous species, *Officinalis*, the old double crimson, was the first introduced into English gardens, having been brought from Switzerland in 1548, where it

is indigenous, as well as in many other parts of Europe and Asia. Albiflora, the old double white, is a native of Siberia, and was introduced at about the same period. From a limited number of species, several hundred hybrids have been produced, many of which are very beautiful, but scarcely superior to the species, yet necessary to keep alive the interest in the genus. One or two herbaceous species have been found in Oregon and California, but are inferior to the European species. Moutan and its varieties are natives of China and Japan, principally on Mount Ho-an, where it is reported they grow to the height of ten feet. The native species is purple, but there are white, pink, pale purple, and mottled varieties. There have lately been raised some very beautiful varieties of the Tree Pæony. The shrubby species were first introduced in 1794.

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### UMBRELLA CHINA TREE.

 genus of tropical trees found in the Southern States. It is known technically as *Melia Azedarach*, and has many other names, such as Pride of India, Holy Tree, Hill Margosa and China Berry. It is from thirty to fifty feet high, with bipinnate leaves, and large bunches of fragrant, lilac-colored flowers, which are succeeded by a fruit about the size of a cherry, with an external pulp and a hard nut within. The Arabic name, *Azedarach*, implies a poisonous plant, and the fruit is generally considered so. The root is bitter and nauseous, and is used as an anthelmintic. The tree is supposed to possess febrifugal properties, and a decoction of the leaves is used as a remedy for hysterics. The ease with which it grows is somewhat offset by the readiness with which its branches are broken by the wind. Its wood makes

excellent fuel and is used for furniture also in many parts of the South.

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### PENTSTENION.

**A**N extensive genus of hardy and half-hardy herbaceous plants. Several of the species are common from North Carolina to Florida. The more showy species, those usually cultivated, are natives of Texas, Oregon, Colorado, Rocky Mountains, etc., and Mexico. Those introduced into the garden are beautiful plants, growing from one to three feet high, with white, pink, scarlet, blue, or purple flowers, produced freely from April until October. Most of them grow well in a light loam. They should have as dry a situation as the garden affords, as they suffer more from wet than cold during Winter. Several of the California species, of late introduction, are very difficult to Winter over in the border; being found in a coarse, sandy soil, and their period of rest being the dry season, they seem little inclined to adapt themselves to our climate. The beauty and profusion of the flowers will, however, pay for the protection they may need against the elements. Many of the species will flower the first season from seed, if sown in the greenhouse or an early hot bed, and once transplanted before being transferred to the open border.

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### ERYTHRINA.

**A** GENUS of ornamental flowering greenhouse shrubs commonly known as Coral trees. They are found pretty generally distributed throughout the tropics of both hemispheres. All produce scarlet or crimson pea-shaped flowers in pairs at the axils of the leaves. Crista-



galli and Laurifolia are from Brazil. Both succeed well planted out in a warm situation in the open border, producing flowers in the greatest abundance. They require considerable room, being rank growers. As a shrub for the lawn they have few if any superiors, their showy flowers contrasting finely with their bright glossy foliage. Hendersonii, a variety of recent introduction, is one of the very finest flowers, a bright scarlet, smaller than the other species, but produced in greater abundance. As it flowers earlier it seeds freely, so that it can be grown as an annual plant. The only care required is to take the plants up, after the tops are killed by frost, and keep them through the Winter in a warm dry room or in the cellar. The roots should be kept covered with dry sand. In Spring cut well back before planting out. They are readily propagated by cuttings of the tender shoots, or from seed, which should be sown in boxes about the first of January, and they will make flowering plants the coming Summer.

### CAMPANULA.

**V**ERY extensive and well-known genus consisting of more than two hundred species, including annuals, biennials, and perennials. Some of the hardy perennials are dwarf plants, producing a profusion of flowers, which renders them particularly adapted for rock-work or growing in pots. Pyramidalis is a tall-growing variety, at one time a very popular plant, and some of the old gardeners still cling to it with a peculiar fondness. When grown in pots it will require frequent repotting, which will bring it to an enormous size. When well grown it is a splendid plant. Medium (Canterbury Bell) is a very ornamental garden flower of the easiest culture, with

double and single varieties, bearing blue, red, purple, and white flowers. Like other biennials, it may either be sown where it is to remain, any time after midsummer, or may be sown in beds in Spring for transplanting. *Rotundifolia* (Harebell) is the most beautiful of our native species. Some of the species are grown in France and Italy as esculent roots. All succeed well in any good soil, and are propagated freely by seeds or division.

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### PANCRATIUM.

**W**ELL known through the South as "Spider Lily" and very plentiful. They are Lily-like bulbous plants, with long strap-like leaves, mostly deciduous, a few only being persistent. The flowers are white or greenish-white, produced in an umbel on a solid scape about two feet high. The species are found in the South of Europe, North Africa, Syria, Arabia, and in several of the more Southern States. *Carolinianum* is common in most of the salt marshes from South Carolina to Florida. Chapman, in his "Southern Flora," makes no distinction in the two species. They should be grown in light loam and leaf mould, and allowed a season of rest. They are propagated by offsets.

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### LAPAGERIA.

**T**HIS was named after Josephine Lapagerie, wife of Napoleon I. This will stand the Winters in all the Gulf States, and ought to be more freely grown than it is. *Rosea*, and its white variety, are unquestionably the most beautiful greenhouse twining plants yet introduced. The stems are round, branching, and will grow to almost

any required length, with proper treatment. The flowers are large, Lily or bell-shaped, and produced on solitary one-flowered peduncles. Rosea has deep rose-colored flowers, spotted inside with white. There has lately been introduced a double variety, the character of which has not yet been established. They should be grown in a house with a low temperature, and given plenty of air, water, and root room; the latter is a necessity. They do tolerably well grown in tubs, but are seldom seen in perfection except when turned into the border. The soil should be largely composed of leaf mould and sand. They are increased either by layers or from seeds, the latter being preferable; plants from cuttings rarely succeed. They are natives of Chili. Introduced in 1847.

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#### VINCA.

**T**HE Vinca is also called Periwinkle, or Creeking Myrtle. They seem to endure the heat of our Summers very well, being continually in bloom. They are a well known genus of hardy herbaceous, evergreen, trailing plants, and greenhouse, low growing woody herbs. Major and Minor are respectively the Long-Leaved Periwinkle and the Common Periwinkle, known in cottage gardens as Myrtles. They are natives of Europe, and have long been in cultivation. They are much used in cemeteries for covering graves, the deep green of the leaves contrasting with the delicate blue flowers. There are varieties with gold and silver edged leaves, considerably grown for basket plants and conservatory decoration. Rosea is a beautiful plant, with flowers pure white, white with rose eye, and plain rose colored. They grow from twenty to thirty inches high, and are completely covered with flowers the entire Summer. They do quite

as well planted in the open border as when grown in the greenhouse. They are natives of the East Indies, and were introduced in 1776. These plants may be grown from cuttings or from seed, the latter being preferable. The seed should be sown in the hothouse or hotbed about the first of January, in an average temperature of not less than 70°, and grown on in the same manner, and planted in the flower garden at the same time as other tender bedding plants. Planted eighteen inches apart each way, they completely cover the ground.

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### CALYCANTHUS.

**T**HIS is frequently called Strawberry Shrub, Carolina Allspice, and many other local names. The variety *Floridus* is a native deciduous plant, remarkable for the scent of the flowers, which is commonly thought to resemble that of ripe fruit, as well as for their peculiar color. It is a native of the Southern States, perfectly hardy, and will grow in almost any soil or situation. Propagated by seeds or offsets. The bark of this species is used in the adulteration of cinnamon. There are other species and varieties, but this is the more conspicuous and desirable.

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### TRITOMA.

**T**HE Tritoma, or Red Hot Poker plant, and also Flame Flower, as it is popularly known, is a very beautiful half-hardy herbaceous plant, native of the South of Africa. The genus consists of about half a dozen species, the finest being *Uvaria Grandiflora*, a plant admirably adapted for single clumps on the lawn, or among shrubbery, where its tall spikes of orange-red flowers make an

effective display from August until December. The flowers are not at all injured by a few degrees of frost, and it is not an uncommon sight to see its tall spikes in perfect flower in December. They are readily increased by seed or by division of the roots, which should be done in early Spring. This genus was first introduced in 1707, though it has not been long common in our gardens in the South.

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### MYOSOTIS.

**T**HERE is no flower better known in the literature of all countries than the Myosotis, or Forget-Me-Not. Everybody knows them and they are universally cultivated. The sentiment which they convey has woven them into an endless list of songs and stories. They are hardy annuals and perennials, comprising some native species. They succeed best in moist places. The best plan is to cultivate in frames like Pansies. All of them are readily propagated either by divisions or by seed. There are several varieties of them, but the variety *Palustris* is the one most known.

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### ZINNIA.


**N**AMED in honor of John Godfrey Zin, a botanist, are hardy annuals, and natives of Mexico. Great improvement has been made within the last ten years in this flower, and our own florists and seed growers have been foremost in this work. The finest strains of this flower are now to be had of the seed growers in this country. Some of the varieties are truly magnificent; the dull, dingy colors have given place to bright scarlet, clear rose, pure white, orange, canary yellow, etc., and



the flowers are perfect in shape, and evenly imbricated like a Camellia. Zinnias require but little attention, and will grow well almost anywhere. For perfection of flower the seed should be sown early in a hotbed or the greenhouse, and once or twice pricked out before planting in the open border. Set the plants two feet apart each way, and they will completely cover the ground early in Summer. They will commence to flower in June, and remain until killed by frost. The flower lasts a long time, looking cheerful until the seed is quite ripe. The fact of the flowers remaining so long perfect has given the plant one of its common names, "Youth and Old Age."


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#### LIBONIA.

 RECENTLY introduced genus of handsome flowering plants from Brazil. Floribunda, the only species now known, is a small suffruticose plant, with elliptic oblong leaves, and very abundant tubular yellow-tipped scarlet flowers, one or two from each leaf axil. The flowers are drooping, very abundant, and exceedingly ornamental. These plants should be grown in the greenhouse, where they will flower from November till Spring. They are also excellent sitting-room plants, and worthy of a place in any collection. They grow best in a moderately rich loam, and should be regularly and abundantly watered. They are easily raised from cuttings. Introduced in 1864.

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#### PHLOX.

 AN extensive and handsome group of plants of native origin, and contains many valuable hardy herbaceous plants. The Perennial Phloxes are seedlings from



Oxalis.

Phlox Paniculata, very common all through the South. The European florists have given this class much attention and raised some very excellent varieties; yet within the past few years many handsome sorts were produced in this country. Phlox Subulata is the Moss or Ground Pink. This is a beautiful dwarf flowering species rarely exceeding six inches in height, and grows in clumps, producing its rich flowers in great profusion in the early Spring. Most of the finest hybrid sorts bloom in mid-Summer from June until September and make a fine display in the garden. Their blooms last quite a while, and it may be ranked as one of the most ornamental Summer flowering plants we have. They are all perennials, entirely hardy, and may be freely propagated by cuttings or dividing the roots. It is best propagated by cuttings from the young green tops it first makes in the Spring. They will root freely in sand in a shaded situation, either in a cold frame or in the propagating house. Phlox Drummondii is the only annual species. This is raised freely from seed, and is a native of Texas, where it was discovered in 1833 by Mr. Drummond, a botanist sent out by the Glasgow Botanical Society, after whom it was named.


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### OXALIS.

**T**HIS genus comprises a great number of species, differing widely in their habits and manner of growth. Some are annuals, some herbaceous perennials, some greenhouse shrubs. Many have tuberous roots, others are bulbs. Some are tender, others perfectly hardy. The flowers are always handsome in form and beautiful in color. The leaves vary considerably, but they are most commonly trifoliate, and slightly acid. Many of

the species are grown in the greenhouse, one of the most useful being *Floribunda*, which was introduced from Brazil in 1829. This very beautiful species requires the protection of the greenhouse during Winter. It has bright rose-colored flowers, which are produced in great abundance during nearly the whole year. There is a variety of this species with pure white flowers. Both are rapidly increased by division of the root. All the species under cultivation are either from the Cape of Good Hope or South America, and all alike are of easy culture.

#### NERIUM.

 An old and popular favorite, commonly called Oleander, which has a place in every garden of any size on this continent. It comes in for a share of every housewife's care, just as much as a choice piece of furniture or a valuable heirloom, and a home was once thought incomplete without an Oleander. In the North they are grown in large tubs or boxes, and in this manner ornament the lawn or porch through the Summer season, and are generally Wintered in a cellar or other place away from frost. South of this point the Oleander occupies a permanent position in the flower garden, and in the extreme South they attain quite a large size. At Galveston, Texas, many beautiful specimens are to be met with in all available places. There are several varieties of color, pink, white, yellow, and various shades of red and rose. They are natives of the East Indies. Sometimes they are infested with scale, but this is only where they are stunted in tubs or grown as house plants. Frequent spongings of the leaves will, however, always prevent this. They delight best in a compost of two

parts good loam, two parts well decomposed manure, and one part peat. This is where they are grown in pots or boxes; for out door cultivation in the South they do remarkably well in any, good rich garden soil. They are easily propagated from cuttings, the chief point being to give them plenty of moisture. Most amateurs root them in bottles of water, a very good plan, the only trouble being that in transferring them to the soil after forming roots in the water the roots sometimes rot or dry away. The best plan is to put the cuttings in saucers or some vessels that will hold water, and fill with sand; as they are being continually sprinkled, the vessel will hold all the water, and soon it will be a moving pulp of sand and water, in which they root very freely and do not rot after being planted in good rich soil as quick as if rooted in water alone. A judicious cutting back after they are done flowering will greatly help the appearance of the plants.

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## VIOLETS.

**V**IOLETS, considered by some as typical of modesty, by others are deemed emblematic of faithfulness; and the latter have the support of one of Shakespeare's contemporary poets:

Violet is for faithfulness,  
Which in me shall abide;  
Hoping likewise that from your heart  
You will not let it slide.

The Violet was as proud a device of the Ionic Athenians as the Rose of England and the Lily of France. In all seasons it was to be seen exposed for sale in the market-place at Athens, the citizens being successful in rearing it in their gardens even when the ground was covered



with snow. The Greeks called this flower Ion, and it was said that Jupiter caused the first Violet to spring up in the grass, when the unhappy Io, metamorphosed into a heifer, bent her lips to eat. Shakespeare employs his beloved flower as the type of modesty and maidenhood. Indeed, poets are continually using this retiring blossom as an emblem of those qualities. Practically there is little to be said about the Violet for a Southern reader, for every lady in the South can grow and propagate them with great success, in fact in many portions of the South ladies cultivate them extensively and ship the blooms in the early Spring months to Northern florists. The Winter and early Spring climate of the South is just what they like, but they do not like our dry Summers. They are easily propagated by runner in a manner as you would Strawberry plants. When wanted in quantities the best plan is to cut off the runners and insert them in the propagating bed as you would other cuttings, when they will freely root and may be potted up and afterwards transplanted where desired. There are varieties of single and double flowers, and the range of color is from pure white to the deepest purple. A variety described as a pink in color was introduced a couple of years ago, but we think it did not amount to much, as it was soon lost sight of. Swanley White is the best double white, and Marie Louise the best double purple. The Czar is a fine large purple single sort, and Schoenburn is also a free blooming single purple. Neapolitan is a very light single blue.

## CHAPTER XVII.

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### JASMINE.

**T**HE delicacy and matchless fragrance of all the Jassamine family is well known and highly appreciated in the South, and it has at all times offered a theme to the poets until the sweetness of the Jassamine has become proverbial. There are many varieties of this class, some dwarf growing shrubs and some running vines; all are cultivated in the greenhouses of the North, but in the South they all seem to be quite at home in any position around the domestic plot.

### GARDENIA FLORIDA.

This is known the country over as Cape Jassamine, and is too well known in the South to need description. In the North they are treated as greenhouse plants, and make handsome specimens when properly grown, their bright green foliage contrasting beautifully with the handsome white blooms. In England whole greenhouses are devoted to their culture, where the plants are forced into bloom in the Winter and Spring months, the flowers being much sought after. In portions of Mississippi and other of the Southern States there are large numbers of them cultivated and thrive admirably in the open air, sometimes making quite large bushes, from which hundreds of blooms are cut daily and shipped to the florists



Cestrum Nocturnum.

of the North. It is a native of China and is propagated by cuttings.

#### CESTRUM NOCTURUM.

This is the Night Blooming Jassamine, which is a native of the East Indies and South America. It flowers abundantly all the Summer, but is not hardy in this latitude. When in bloom it perfumes the whole garden at night, but strange to say, never has any odor during the day. It is a very handsome plant, with bright foliage and compact habit of growth. It is easily propagated by cuttings.

#### CATALONIA JASSAMINE.

This is *Jasminum Grandiflora*, a shrubby half climbing species with small star-shaped blossoms, highly fragrant and pure white in color. Is hardy in the South, and is propagated by cuttings.

#### JASMINUM REVOLUTUM.

This is a yellow flowered variety of a shrubby appearance, is hardy and very popular; it is, however, not a climber.

#### JASMINUM GRACILLIMUM.

This is one of the most distinct in its graceful habit and in the abundance of its large sweet-scented flowers, which are also more copiously produced. It appears to be a small species, with long, very slender branches springing from low down on the stem, and curving over on all sides, weighed down by terminal globose panicles. A flowering shoot is produced from every joint, which terminates in a dense cluster of pure white fragrant flowers.

#### JASMINUM SAMBAC.

This is familiarly known as Grand Duke of Tuscany, and is a shrubby variety with very large handsome double white flowers, and is among the most fragrant of all. It

is a native of India, where it is highly prized for its odor. There are many other varieties all well known through the South, but the foregoing are most popular and deserving of best attention.

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### SMILAX.

**W**ELL known to all American florists, and is a native of the Cape of Good Hope. It was first introduced into England in 1702, but was soon discarded. It is one of the most important adjuncts of a florist's stock, and is of near as much importance as the Rose. It is of easy culture and is generally raised from seed. The seed should be sown in February or March in boxes in the greenhouse. As soon as up they should be potted separately in small pots; as they grow rapidly, they soon need larger pots, and about August they may be set out in a bed in the greenhouse where intended to grow, about six inches from plant to plant, and about one foot between the rows. Each plant must have a string fixed to a wooden peg at the root, and the other end tied to the rafters. With a little assistance at first it will soon run up the string and make a beautiful rope of green by Winter or early Spring. It loves a rich soil and shade and delights in frequent syringings through the warm weather.

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### PANSY.

**P**ANSIES are universal favorites wherever seen; everybody that sees them wants one, and no one ever tires descanting on their charms. The great variety of color to be found among them so beautifully contrasted is perhaps one reason they are so highly admired. It is only



in the early Spring months the Pansy attains its finest perfection in the South, as it does not like our dry Summers. The best way to get good Pansies is to buy good seed and sow it in a cold frame in September, and when the little plants come up let them stand until early Spring, about February 1st in this section, and plant them out in the gardens or borders where they are intended to flower. It is always best to get new plants every year, as sometimes it is difficult to keep the old plants through the Summer, and even if you do the flowers will be small and inferior to those of young plants. Anybody that does not care or have the conveniences to raise them from seed, can buy a fine selection from any florist in the early Spring at only a small cost, that will give fine satisfaction. In saving the seed the little pods must be gathered while they are quite green, as if allowed to mature on the plant they soon burst and the seed would all be lost. They will ripen after being gathered, if put in a box or vessel in a dry place; a piece of paper should be thrown over them, as even in this state they burst and the seed fly out of the box or vessel, if something is not done to prevent them. Pansies delight in a rich light soil and plenty of moisture.

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#### MUSA ENSETE.

**A** BYSSINIAN Banana. A native of the mountains of Abyssinia. This magnificent plant attains a height of thirty feet, the leaves occasionally reaching the length of twenty feet, with a width of three feet, being perhaps the largest in the whole empire of plants, exceeding those of Strelitzia and Ravenala, and surpassing even in quadrate measurement those of the grand water plant Victoria Regia, while also excelling in comparative circumference



**Musa Ensete.**

the largest compound frond of *Angiopteris Evecta* or the divided leaf of *Godwinia Gigas*, though the compound leaves of some Palms are still larger. The inner part of the stem and the young spike of the *Ensete* can be boiled to serve as a table esculent, but the fruit is pulpless. The plant produces no suckers and requires several years to come into flower and seed, when it dies off like the Sage plant, the *Caryota* Palm, and others, which flower but once without reproduction from the root. *Musa Ensete* prefers a clay soil, and will luxuriate in all the manure one dares to give it.

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### HOLLYHOCKS.

**T**HIS is one of the most noble garden ornaments we have. A fine bed of them are very effective in a large garden, and always have admirers, old fashioned though they be. It grows from a height of from five to eight feet, and the varieties are almost of every color, including white, and purple so deep as to be almost black. The seeds of the Hollyhock should be sown in March, and as soon as they come up should be thinned out and remain until Fall, when they may be planted where wanted to flower next Spring. They were introduced from China in 1573. The single flowered varieties are not of much account except as an ornament in the herbaceous border and nearly all the double ones can be used with fine effect in cut flower work; for this purpose the double white pinks and yellows are in the lead. The double and single varieties should not be cultivated near each other in the garden, and if double ones only are required, the single ones should all be destroyed as soon as they bloom enough to reveal their character. If the seed buttons are kept cut away as quick as they appear, the plant will continue

to bloom much longer. In the case of a very handsome variety, the root may be taken up in the Fall and divided if more plants are desired. The technical name of the Hollyhock is *Althea*, and the common hardy shrub known as *Althea* is *Hibiscus Syriacus*.

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### COLEUS.

**A**N extensive class of plants, natives of Asia and Africa. It consists of annuals, sometimes perennials, but none have value as flowering plants, but are of general use in the flower garden on account of their bright foliage for bedding or massing. From the original species many varieties noted for their beautiful foliage have been produced by florists. All are readily produced from cuttings and are of the simplest culture. By careful arrangement and a good selection of varieties, the most beautiful of beds can be made on lawns or in parks during Summer with these plants. They grow so vigorous that they must be cut into shape through the Summer, or their fine effect will be lost. To keep them through the Winter they need a high temperature; a brisk greenhouse heat suits them. They will not stand the damp atmosphere of an ordinary pit.

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### HIBISCUS.

**T**HIS is a class of ornamental plants with large showy blooms, and are extensively cultivated. Some have double and some single blooms. They are some of the species that are coarse grown, and can only have a place in the garden. The Chinese Hibiscus are decidedly the prettiest in the group, and are rather slow growing ever-green plants with bright green foliage, and makes a nice

ornament for the greenhouse or pit, as well as for the flower garden. They are propagated by cuttings, and when large plants they may be wintered in a cellar or dry airy place, where they will not get much frost. They may be entirely shook out in Spring and cut back, when they may be planted where desired.

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### SWEET OLIVE.

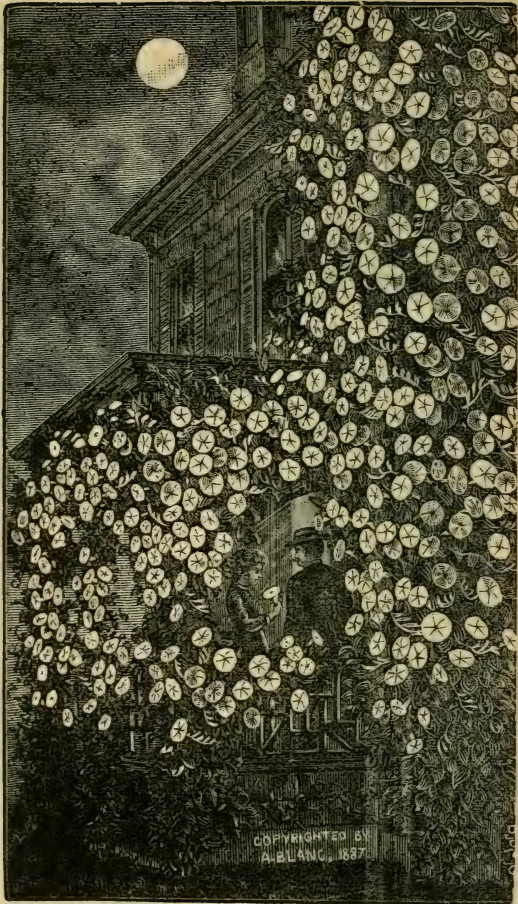
**T**HIS is the *Olea Fragrans*, a native of China, and is highly oderiferous, both in the foliage and flower, and on this account is much esteemed by the Chinese, who use their leaves to adulterate and flavor tea. It also makes a favorite greenhouse plant, and is easily propagated by cuttings. It is well known all through the South; nearly every lady who has flowers at all, has a Sweet Olive. There is a species, *Oleo Americana*, common from North Carolina to Florida, which is an ever-green shrub or tree producing panicles of small white fragrant flowers and a bitter astringent fruit about the size of a pea.

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### MOONFLOWER.

**P**ROPERLY speaking this is *Ipomæa Noctiflora*, but is generally known as the Moonflower or Evening Glory. It belongs to the Morning Glory family, but is vastly more popular, though perhaps not as well known. Nearly everybody has seen aurora sipping nectar from the bells of the Morning Glory, but only a comparative few have seen the beauty of her charming sister, the Queen of Night. This is now one of the most rapid and handsome climbers we have, and will grow to a height of fifty feet in a Summer, all circumstances being favora-





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b'le. Its flowers remain open all night, and close in the morning, except in the case of damp cloudy weather. It is most interesting to watch them open in the evening, as they burst right into bloom from a small bud in a minute or two. The flowers sometimes attain the size of six inches in diameter, and is a most profuse bloomer. The same bloom does not open twice, but there are always plenty to come along to make a fine display each night. In the South, where frost stays away until very late, it ripens its seed freely, and is by this means easily increased. In this and more Northern latitudes it does not ripen its seed freely, and it is consequently grown from cuttings. By taking in a few old plants in the Fall and cutting them back, they will give you in the Spring all the cuttings desired if kept in a moderately warm place.



## CHAPTER XVIII.

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### BULBS.

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#### HYACINTH.

Shade-loving Hyacinth! thou comest again,  
And thy rich odors seem to swell the flow  
Of the lark's song, the redbreast's lonely strain,  
And the stream's tune—best sung where wildflowers blow—  
And ever sweetest where the sweetest grow.

**A**CCORDING to the mythologists, this fairy-like fragile flower had its origin in the death of Hyacinthus, a Spartan youth, greatly favored by Apollo. He fell a victim to the jealous rage of Zephyrus, who, in revenge for the preference manifested for him by the Sun-god, had determined to effect his destruction. Accordingly, one day when Hyacinthus was playing at quoits with his divine friend, Zephyrus blew so powerfully upon the quoit flung by Apollo that it struck the unfortunate prince on the temple and killed him, to the intense grief of his innocent slayer. To commemorate the grace and beauty of the dead youth, Apollo, unable to restore him to life, caused the flower which now bears his name to spring from his blood. An annual solemnity, called Hyacinthia, was established in Laconia in honor of Hyacinthus. It lasted three days, during which the people, to show their grief for the loss of their darling prince, ate no bread, but fed upon sweetmeats, and abstained from adorning their hair with garlands as on ordinary occa-

sions. The following day was spent in feasting. Hence, perhaps, one of the floral meanings—"Play." The purple Hyacinth signifies sorrow, as it is said to bear on its petals Apollo's lament for his friend. It is not too much to assert, that the Hyacinth is at once the most useful and popular bulb of the present day. It not only affords support to thousands, but pleasure and delight to millions of the human race. From its Eastern home it has spread West, North and South, until its beauty and fragrance enrich all civilized lands. Considering the matchless beauty, rare sweetness, amenability to treatment the most diverse, and its endurance of hardships the most severe, it is wonderful that the Hyacinth has not had its "manias," as have Tulips and Chrysanthemums. The Hyacinth is a native of the Levant, and was first introduced in 1596.

#### FORCING.

For forcing, the bulbs should be potted about the middle of September in five or six inch pots in rich, light earth, and placed in a cold frame or under a wall, where they can be covered with wooden shutters, or some similar contrivance, to keep off heavy rains. In either case they should be covered a foot thick with hay or leaves; and being once well watered after potting, they may be left for a month to form their roots, when the most forward should be brought out and placed in a pit or cold greenhouse and allowed to come along gradually. At this point it is necessary to be very careful in regard to giving too much heat, or the flowers will be failures. It should not exceed a temperature of 50° for the first three weeks, and may afterwards be increased to about 60°. When the flower stems have risen to nearly their full height, and the lower flowers of the spike are beginning to expand, the plants should be removed to a lower

temperature, usually afforded by the greenhouse; and when the flowers are fully expanded, the plants can be taken to the sitting room, or wherever their presence is desired, observing to protect them from sudden changes or cold draughts of air, and it will help them if the water given to them should be moderately warm, say 80°.

### GROWING IN GLASSES.

Hyacinths in glasses are an elegant and appropriate ornament to the parlor, and for this purpose occasion little trouble. The bulbs should be procured and placed in the glasses as early in the season as possible, keeping them in the dark until their roots are well started, after which the lightest position that can be afforded is the best. The water in which they grow should be changed twice or thrice a week, and in severe weather the plants must be removed from the window, so as to be secure from frost.

### OUT-DOOR CULTURE.

For decorating the flower garden, the bulbs should be planted in October or the early part of November, at six or seven inches apart each way, in light, rich soil, at a depth of four inches from the crown of the bulb to the surface of the earth, and covered over, as soon as the ground freezes, with three or four inches of leaves or rough manure. It may be necessary to place sticks to them when in bloom, to prevent them from being broken by the wind; and this is all the attention they require till the foliage is withered, and the season has arrived for taking them up, when, instead of the usual practice of drying them at once in the sun, we would advise the Dutch method to be adopted, namely, to place them side by side on a sunny spot of ground and cover them with about an inch of loose earth. Left in this position for a



couple of weeks, they will become dry and firm, and an hour or two of sunshine will finish them properly for storing. The growth of Hyacinth bulbs for sale is chiefly done in Holland. The sandy soil and moisture of both soil and climate in that country are especially favorable to the growth of the Hyacinth. Hundreds of acres are devoted to the culture of these and many other bulbs that we all hear so frequently referred to as "Dutch Bulbs," and the gardens of our Dutch friends are gay sights from early Spring until far into the Summer. The plan of propagation is carried on by sowing the seed or by taking offsets from the parent bulb. It is only from seeds that new varieties are obtained, and all the already known and valued kinds are raised from offsets from the parent bulb. The bulbs in some cases are cut crosswise and sprinkled with sand or dry dirt to absorb any moisture that may exude from the new cut. After a time they are planted in the earth, when numerous small bulbs are formed on the edges of these cuts. At the expiration of one season they are again lifted from the ground and the numerous small bulbs still only partially developed are separated from the parent root and planted out from year to year for three or four years before they become flowering bulbs and of a marketable quality. It is only Dutch skill and perseverance that can accomplish this. In offering our Fall bulbs for sale we often say they are the best imported bulbs, when ladies sometimes ask why we do not raise them ourselves. When we tell them the climate, disadvantages, and the lack of patience in the American breast to await the four or five years' development of a bulb that can be bought for a dime, they only appear half satisfied, and tell you they grow them themselves and it is not a bit of trouble. Yes, bless them, we know they can raise a few, but if they were to raise them

for a living their crop of Spring bonnets, like the bulbs they raise, would soon become so diminutive that they would not long persist in the work, but at once yield the palm with gratitude to the Dutch. In the Spring, the most delightful period of all gardening operations, when the Hyacinth is in bloom in your neighbor's garden and you catch its perfume across your fence, you will at once decide to get some, and perhaps send the order right away. This is a mistake, for it is disappointing to you and annoying to the florist, for the order for these bulbs cannot be satisfactorily filled in Spring. Fall is the time to buy Hyacinths, say from September 1st up to the middle of December, and if you cannot make it convenient to buy them at this time, do not buy them at all. Everybody wants to get some when they see them in bloom in the Spring, but as soon as they quit blooming and the proper season at hand for planting, they are generally apt to be forgotten, and many promised purchase of Hyacinths in the Fall goes unfilled until the fragrant reminders again pierce the earth in Spring, and then the promise is more emphatically renewed, and the chances are if they should live long enough they may finally get a bed of Hyacinths. It is not necessary to take up the Hyacinths as before directed, unless you wish to cultivate the ground and plant something else in it for the Summer. They will remain in the ground from year to year and flower each Spring, but the blooms will be small and they degenerate in this way very rapidly. We are often asked if it injures the Hyacinth to "pull" the bloom, to which we say no; that part of the stem that comes up from the bulb when the bloom is pulled is of no use to the bulb, as it is an integral part of the bloom, and if not taken away with the bloom, will die, as it has no functions to perform after the flower spike is cut away.

## ROMAN HYACINTHS.

The white Roman Hyacinth is one of the most useful of all flowers we have for the Christmas holidays, and for this purpose it is grown extensively by florists all over the Union. These bulbs are chiefly grown in France and imported by American dealers by the hundred thousand. They are smaller than the Dutch bulbs, but always produce from three to five spikes of bloom to the bulb, which are of a beautiful white color, graceful and exceedingly fragrant. The same treatment as for the other Hyacinths will do, though they do not need to be covered with ashes as described for the others, and can be brought in to the house sooner, and by a regular succession of bulbs a continued crop of bloom can be kept up from December until May. There are other varieties of the Roman Hyacinth, but it is only the white that we consider of much value to us. On account of its early blooming, it is not much used for bedding, as it gets in bloom almost before the snow gets off the ground, and coming this early in the cold they are always small and of a stunted appearance. It is only in a pit, greenhouse, or sitting room, that they show off to advantage. Hyacinth bulbs that have bloomed in a greenhouse in Winter will not do much in the ground the following season; it generally takes a couple of years to get them strong enough to make even a small bloom spike, and never good enough to grow in pots a second time. It is only for amateurs this information is given, as it is often asked for by letter at busy seasons, when we can ill afford to write it. Florists as a rule always get new bulbs every Fall and force them to bloom in the Winter and Spring months, and after blooming throw them away and buy new bulbs for the next season, the old bulbs not being considered of any practical use to them.

## HYACINTHUS CANDICANS:

The only species of the Hyacinth that blooms in Summer. It is an interesting South African plant with lanceolate deep channeled foliage two feet in length, with a stout stem three to four feet in height, bearing a spike of from fifteen to twenty large white flowers. It blooms in July and August, and has a most striking and ornamental appearance, when grown in the centre of a lawn or flower bed, in the shrubbery border, or near a hedge. It is perfectly hardy and admirable for slumps on the lawn. It may remain in the ground for all time.

## TULIP.

THE name Tulip is derived from a Persian word, signifying turban, an Eastern head-dress, sometimes made in the form of a well shaped Tulip. At one time a few Tulip bulbs were considered a high trove treasure, but at the present day all who want may come and be served; the stock is large, and we never again expect a Tulip mania. There are many varieties of Tulips and we will begin with the

## DUC VAN THOL.

This is the earliest and best for pot culture and forcing. If planted in pots in Autumn and treated as Hyacinths they will flower well in an ordinary room during the early Spring months, and make a nice companion flower for the Hyacinths and Narcissus about blooming at that time. They will flower in water like the Hyacinth, but with less chance of luxuriance, and for this reason are all the better grown in pots. The Duc Van Thol was introduced into English gardens from the South of Europe in 1603.

## SINGLE EARLY TULIP:

These are the parents of our ordinary garden varieties and are natives of Asia Minor, Calabria and Central Italy. There is almost an endless variety of this class, and have received for more than two centuries all the care and attention that it was possible to bestow upon a plant, not only by the Dutch florists but by nearly every skilled gardener in the old country. Nearly every color and shade, except black, is represented, either alone or mixed, striped or shaded; in fact, every possible combination of color may be obtained. Double Tulips are almost as common as the single, many of them very showy and desirable. But, like all others who have made a specialty of the Tulip, we could never admire the double as much as the single varieties. Late flowering or Show Tulips have been grown from seed by millions, the result of which has been the acquisition of many superb varieties. There is a singularity in Tulips which belongs to no other flower. The seedlings generally, when they first bloom, produce flowers without any stripes or markings, but with a yellow base, the upright portion of the petals being self-colored, brown, red, purple, scarlet, or rose. In this state, when they have been grown for years without variation, they are called Breeders or Mother Tulips. These are planted every year until they break into stripes, when, if the markings are fine, or different from any known, they are named. Each person who has "broken" one claims and has a perfect right to give it a name; but much confusion naturally exists, because of the fact that different names have been given to those that have broken almost exactly alike. In a bed of a thousand seedlings, it is not probable that any two will be very nearly alike in their markings, and none are ever identically the same. This uncertainty



adds greatly to the charm of Tulip cultivation. The hope of something new in the markings and penciling is a sufficient stimulus for the enthusiast to persevere in his labor until he has found one worthy of a name. A singular feature in the Tulip is, that after it breaks it ever remains the same. Show Tulips are divided into three classes : First—Bybloemens, such as have a white ground, variegated with purple, the edges well feathered, the leaflets erect, and the whole forming a perfect cup. Second—Bizarres, having a yellow ground, variegated with scarlet, purple, rose, or violet. Third—Roses, with white ground, variegated with rose color, scarlet, or crimson. Parrot Tulips are ignored by those florists who claim a right to say what is and what is not beautiful. Not being bound to observe the laws that regulate the form, shape and marking, we prize this class very highly on account of their singularly picturesque appearance. The flowers are very large and colors exceeding brilliant. They are unequalled for groups in mixed borders or conspicuous places on the lawn. This class is small but all are beautiful.

#### SOIL AND CULTURE.

Although the Tulip will grow and bloom in almost any soil it is planted in, it delights best in a rich, rather light, well drained loam. A bed of sufficient size for planting the bulbs should be dug, at least twelve inches deep. The bulbs should then be planted six inches apart each way; pressed deep enough to keep them in their places, and covered with mould to the depth of three inches on the sides of the bed, and five inches in the centre. This precaution is necessary, that water may not stand on the bed during the Winter. When the bed is planted and covered, it may be left to the weather until the Tulips come up, or about the first of March. A slight protection

of litter is then required, as the frost has a tendency to check the bloom. When the flowers appear, if they are protected from the sun by a light canvas, the period of bloom may be kept up for three or four weeks. The colors are generally better if not shaded at all, but in that case the bloom would be soon over. Sometimes a single day's hot sun will completely spoil them. When the flowers begin to fade, they should be cut away and removed from the bed. As soon as the stems of the Tulip turn yellow, and the leaves begin to dry, they may be taken up and put in a cool, dry place. When dry, thoroughly clean off the old skin and dirt, and put in paper bags, ready for planting out again in October. The Tulip is also now extensively forced for cut flowers during the Winter and Spring months. The method of culture is identical with that of the Roman Hyacinth and Paper Narcissus.

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### NARCISSUS.

**T**HE white or poetical Narcissus is adopted as the emblem of egotism, because, according to the mythologists, it owes its origin to a beautiful youth of Rœotia, of whom it had been foretold that he should live happily until he beheld his own face. One day, when heated by the chase, Narcissus sought to quench his thirst in a stream; in so doing he beheld the reflection of his own features, of which he immediatly became enamored. He was spellbound to the spot where he pined to death, and was metamorphosed by the gods into the flower that bears his name. When the Naiads had prepared the funeral pile for Narcissus, the body was missing :

Instead whereof a yellow flower was found,  
With tufts of white about the button crowned.

The poetic Narcissus has a snow-white flower, with a yellow cup in the centre, fringed on the border with brilliant crimson circlet. It is sweet scented, and flowers in May. The cup in the center is supposed to contain the tears of the ill-fated Narcissus. All this class are long established favorites in our gardens, and have been cultivated for years. We remember them in our boyhood as the never to be forgotten "Daffy-Down-Dilly," and to-day we see them everywhere around us as "Butter Cups," "Butter and Eggs," and various other appellations which they respond to. They are, however, all alike for their earliness and fragrance, and all delight in a rich, deep soil made porous with sand and well rotted manure. All of them are entirely hardy. A number of these force very well and are much used for holiday flowers in connection with Roman Hyacinths, etc. For this purpose they must be potted in September in fresh loam, rotted manure, and leaf mould, with half of either quantity of sand. In potting, the neck of the bulb should be kept above the surface of the soil, that the roots may have so much more space in the pot; and when the potting is completed they should be placed together, either in a cold frame or in some convenient place, so that they may be covered a foot thick with fresh leaves. These exclude light and prevent frost from getting to the roots, both essential to a speedy excitement of root-growth. In about five or six weeks it will be found that many of them have filled the pots with roots, and these may be taken into a temperature of 55° to bring on their flowers; but before any plant is taken from the bed of leaves, be sure that it has made a good stock of healthy roots, or it will be spoiled by the forcing process. Narcissi do not require a powerful heat to bring out their flowers, and the supply of water should be sufficient, but by no means excessive.

The Paper Narcissus is now, perhaps, more extensively forced than either of the above mentioned. It is grown in immense quantities by the florists, and next to the Roman Hyacinth, is the bulb most extensively grown for this purpose. When grown on a large scale it is planted in boxes of soil about five inches deep, at a distance of three to four inches apart, and treated as recommended above. This, like nearly all other bulbs, is of no value after being forced, and the roots may be thrown away. When planted in beds and it becomes necessary to remove them to make room for other plants during the Summer, it should be done as soon as their flowering is complete. As the bulbs are by no means mature at this time, they should be "heeled in" in some out of the way place until the foliage is quite withered, when they may be taken up and stored away until wanted for planting in the Fall. Most of the species are natives of the South of Europe, and all are propagated by offsets.


#### CHINESE SACRED LILY.

This "Lily" that we hear so much about is properly known as Narcissus Tazetta. The flower is white with a yellow tinted cup, a truss of from three to seven borne on a stalk. It grows easily in water and has very large bulbs. This is a good deal of a cheat and touches slightly on the "Novelty" enterprise of many florists. This is, however, not as bad as many things sent out with a new name, as in this case you get a plant that will grow and bloom, and perhaps prove worth what was paid for it, but you are disappointed; you expect a Lily or some very chaste flower of indescribable beauty, when you get a very common Narcissus. The "Eggs and Bacon" of your grandmother's garden you knew years ago. When you see it in bloom you may soliloquise on the theme,

“what’s in a name?” and next season buy a few Paper White or Double Roman Narcissus for one-fifth the price and treat as you did the Lily, and the result will be equal.

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## CROCUS.

 ACCORDING to some authors, these bright little flowers, which derive their name from a Greek word signifying thread, from the fact of their thread or filament being in such request for saffron dye. The Greeks fabled that Crocu, a beautiful youth, was transformed into this flower; as his lady-love, Smilax, was at the same time into a yew-tree. Bees are exceedingly fond of the Crocus; and Moore thus alludes to this fact in *Lalla Rookh*:

The busiest hive  
On Bela’s hills is less alive,  
When saffron-beds are full in flower,  
Than looked the valley in that hour.

The Crocus is divided into two classes; the first, those that flower in early Spring, too well known to need description; the second, the Autumnal flowering, or naked Crocus, so called because the flowers are produced in the absence of leaves, which, with the seeds, are thrown up in the Spring. The Spring Crocus is of the easiest culture, and we need only remark, that it is a mistake to put them into poor ground, since no plants in our garden delight more in, or make greater returns for, rich soil. They require a dry situation, and in such a place and soil they flower profusely. The bulbs or corms should be planted at least three inches deep; for, as the new corm forms above the old one, they will in three or four years push themselves out of the ground if planted too near the surface. As often as once in three years the corms should



be taken up, separated, and planted out as quickly as possible; the longer they are left out of ground the weaker they become, and the later they will come into bloom. In starting a new bed, the corms should be planted as soon as they can be obtained, which is usually about the first of September. If left until November, as is the too common practice, very few will flower strongly the coming season, and none satisfactorily. When left in the ground they commence new life about the first of September, and before Winter they have their preparations for Spring work complete; the flower buds will be nearly their full length above the bulk ready for their first sunny day in February to break forth into bloom. The position for the Crocus bed should be warm. *Crocus Sativus*, which is the type of the Autumnal flowering species, should be planted in mid-Summer, and it will bloom in September. All the species and varieties are increased by offsets. Their introduction into British gardens dates back as far as 1600. There are at present many new named varieties, all of which are very fine, and great improvements on the older kinds.

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### THE IRIS.

Thou art the Iris fair among the fairest,  
 Who, armed with golden rod  
 And winged with the celestial azure,  
 Bearest the message of some god.

**N**EARLY everyone admires the common Iris, but it is not everyone who is aware of the beauty and the delight that may be found in the many members of the family now in cultivation. Taking them all through, no other class of hardy flowers possesses that union of grace and outline with delicacy of coloring, which is the charm

of the Irises. By some they have been compared to Orchids, and those who delight in beautiful combinations of color, and to whom the pleasures of greenhouses are denied, will find a good substitute in the cultivation of a selection of these beautiful plants. They have all the beauty of the finest tropical flowers without their cost, and will repay the trouble of first arranging and planting them, so that their beauty may be seen to the best advantage. Plutarch says the word Iris is from the Egyptian, and means "The Eye of Heaven." The Greeks named this plant from the rainbow, which they called Iris, in allusion to the mingling of brilliant colors in its blossom. Iris was also the goddess of the rainbow and the fair messenger of Juno; the latter being the goddess of the sky and clouds and of the powers and phenomena of the air. Iris was sent to earth, bearing messages of peace to the children of men; she filled the clouds with water from the lakes and sea, and poured in gentle showers again upon the fertile ground, and she it was who bordered every retreating storm cloud with the gorgeous fringe of the rainbow, a symbol of peace. "The historical importance of the Iris," says Mr. Thomas Mehan, "is due to the fact that it became the national flower of France. As such it has acquired a world-wide reputation under the name of Fleur de Lis, which is nothing but a corruption of Fleur de Louis. The Iris was adopted as the national emblem by King Louis VII." The Iris has many different varieties, of which we give a few.

#### IRIS SIBERICA:

This is a distinct group, distinguishable at a glance, their long grass like foliage, two to three feet in height, forming dense erect tufts, and numerous slender hollow stems, bearing an abundance of flowers of various shades.

### ENGLISH IRIS.

This is a group rivalling some of the grandest of the Orchids. The flowers are very large, ranging through every shade of white, lilac, lavender, rose, blue and purple. Some are self-colored, while others are marbled and striped in the most fantastic manner.

### IRIS GERMANICA

This group includes all the broad leaved Iris; every shade of color may be found among them, and as they will thrive in almost any soil or situation without any care whatever, they must be considered necessary in every garden. Neither care or expense has been spared to choose this selection from the finest in Europe.

### IRIS HISPANICA.

A group of bulb Iris, different from the preceding by their smaller flowers, earlier in bloom, dwarfer in habit, and the colors ranging through blue, yellow and bronze; the flowers are invariably splashed and marbled, and in some a most grotesque combination of color. All are fine for cut flowers. This and the preceding kinds are bulbous rooted and should be planted in October.

### IRIS KÆMPFERI.

This is the most hardy of all hardy plants, and we feel sure its beauty is not thoroughly familiar to flower lovers or it would be more extensively met with. To those unacquainted with this Iris we would say that the flowers are different in form from any of the ordinary kinds, being broad and flat; they are single and double and present the greatest variety of color, from the purest white to the darkest shade of royal purple, through pinks and blues, with gold and other marking. In fact, they rival the Orchids in beauty, and are entirely hardy, and



**Iris Kämpferi.**

of the easiest culture. There are many more species of Iris, all beautiful and deserving a position in all gardens. Nothing is more beautiful in the early Summer months than a fine assortment of Iris. They are all hardy in the South, in fact only a few of them require any protection in the North. They will grow on from year to year without any care, and yet preserve their inherent beauty through all time. If necessary to increase the supply they may be taken up in the Fall and divided and again set out where required. This best applies to the tuberous rooted sorts. The fibrous rooted ones had better be divided in the early Spring, when it is desired to increase the supply.

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#### ANEMONE.

**T**HIS flower derives its name from Anemos, the Greek word for wind, from thence came our poetical appellation the "The Wind-Flower." The ancients tell us that the Anemone was formerly a nymph beloved by Zephyr, and that Flora, jealous of her beauty, banished her from her court, and finally transformed her into the flower that now bears her name. The more common myth is, that the Anemone sprang from the blood of Adonis, combined with the tears which Venus shed over his body. The Anemones are showy flowering plants and are prized for their hardiness and early Spring blooming. They can also be had to bloom at any time, according to the time the roots are kept out of the ground. The roots of the Anemones are flat, solid pieces, closely resembling ginger. They should be planted in the Fall or in early Spring in very rich soil and partial shade. When done flowering and the tops are dead, take up the roots and store in a dry airy place where they will keep



well for two or three years without injury. The prevailing colors are red, white and blue, flowers double and semi-double. One of the earliest Spring flower of our woods is *Nemorosa*, the White Wind Flower. They are also sometimes called Pasque Flowers. *Fulgens* is the Scarlet Wind Flower, and is the most beautiful of all the Winter and Spring flowering varieties.

### THE RANUNCULUS.

THE species may be divided into two kinds: border flowers and florists' flowers. The latter consist of some hundreds of varieties obtained from the species *Asiaticus*, a native of the Levant, with tuberous roots. The wild plant grows naturally in Persia, in meadows which are moist during Winter and in the growing season, but dry during a great part of Summer. The usual season for planting the *Ranunculus* is November. The roots may be placed about six inches apart each way, and covered with two inches of soil. The plants will come into flower in June, and when the leaves wither the roots may be taken up, dried in the shade, and preserved in a dry place until they are wanted for replanting. As the plant seeds freely, even when semi-double, new sorts without end may be raised from seed, which may be sown in pots or flat pans as soon as it is gathered and placed in a cold frame. The tubers, if kept dry, will retain their vitality for two or three years; and hence, if roots which should be planted in November are kept out of the ground till the November following, and then planted in pots and protected from frost, and when they appear above ground put into greenhouse heat, they will flower at Christmas. If not planted till December, they will flower about the end of January; and if not planted

till January, they will flower in March. In this way, by always having a stock of old roots, and planting some every month in the year, Ranunculuses may be had in flower all the year round. The common way of propagating the *Ranunculus* is by separating the offsets from the larger roots.

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### SCILLAS.

**T**HESSE are pretty bulbous plants, all of which are hardy and desirable for their early flowering habit. They are commonly called "Squills," and some varieties of them are to be met with in most gardens. They are best planted in October, and prefer a light rich soil. *Scilla Amœna* has blue flowers, and is a native of the Levant. *Scilla Bifolia* has red, blue or white flowers. *Scilla Siberica* has intense blue flowers and is about the best known. All are desirable for a Spring garden, and come into bloom with the *Crocus*, but continue much longer. They may remain undisturbed for years where planted, as crowding does in no way injure them.

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### FREEZIA REFRACTA ALBA.

**T**HIS is one of the most useful of all the Winter or early Spring flowering bulbs and is a great favorite wherever grown. The flowers are about two inches long and in appearance like a miniature *Gladioli*, and are produced in clusters of from six to ten on depressed horizontal scapes. The body of the flower is pure white, with the lower segments spotted lemon yellow. In fact one variety of the *Freezia* comes a light lemon color with a deeper yellow throat. The perfume is most delicious, said to be a mixture of *Mignonette*, *Violet* and *Jassa-*



*Fuchsia refracta* Alba.

mine. One plant is sufficient to perfume a whole room without the overbearing perfume of the Hyacinth or Tuberose. The plant has tooth-shaped bulbs and flat, spreading leaves. It produces more top than any bulb we know of so small in size. Its cultivation is the simplest. Pot in October, about three bulbs in a four inch pot, or five in a six inch pot, in a nice compost similar to that used for other bulbs. They do not require much water until they begin to grow freely, when they should be placed in a sunny window or in the pit or greenhouse. After they are done blooming they should be gradually allowed to dry off and allowed to rest until wanted to start again in the Fall. It is a Cape bulb of recent introduction.

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### CROWN IMPERIAL.

**T**HESSE are showy Spring flowers for the border, and mostly attain the height of from two to three feet. The bulbs are large and generally have a hollow centre, and emit a rather unpleasant odor when handling them. They delight in very rich soil, frequently dug and well pulverized previous to planting. The bulbs may be placed in the ground either in Autumn or early Spring, covering them with about three inches of earth. In the blooming season, should the weather prove dry, the ground must be frequently well soaked with water, that the growth may be sufficiently vigorous, or the flowers of the following season will be deficient in size. When the stems begin to decay, the bulbs should be taken up, but not dried to any extent, it being far preferable to preserve them till the following planting season in sand or light and partially dried earth. *Imperialis* is the well known Crown Imperial, a native of Persia, of which

there are several varieties. As in the case of other Spring flowering bulbs, if the ground where they are growing can be cultivated sufficiently to receive other plants, they may remain in the ground undisturbed for years.


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### ASTIBILE JAPONICA.

 PERFECTLY hardy herbaceous plant. From the dark green cut leaves arises numerous crowded panicles of feathery white flowers. It is used extensively for forcing in pots for early Spring blooming in the greenhouse, where it makes a very ornamental plant. It delights in lots of water when growing in the greenhouse. Plants that have been forced into bloom in this manner are seldom of any account for out door culture afterwards. If fresh clumps are procured in the Fall and set out in the garden, they will remain for years and flower beautifully in the early Spring and Summer.

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### SPARAXIS.

 GENUS that is fast rising in the estimation of both the florist and the gardener. It is a dwarf bulbous family of plants from the Cape of Good Hope, producing flowers about the size and shape of those of the Crocus, the colors of which are now of infinite variety; pure white, yellow, orange, red, purple, and violet, are to be found, either separate or blended in pleasing variations. They succeed best planted in a frame, where they can have a slight protection during Winter. They succeed well also grown in pots in a cool greenhouse. The bulbs should be potted in September, and kept under a bench until they begin to grow, when they should be given



light and water. Three or four bulbs may be put into a five-inch pot with good effect. They increase rapidly by offsets.

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### MILLA BIFLORA.

**T**HIS is called the Mexican Star Flower. A very pretty Mexican bulbous plant, growing about one foot in height, producing numerous snow-white wax-like flowers about three inches in diameter, star-shaped, and exquisitely beautiful and delicate. It is excellent for cutting, keeping fully a week in water; forces well, and is now being largely used by florists for the holiday trade. It should be planted in the early Fall for blooming during Winter in the parlor or greenhouse; for out-doors, plant in May, and take up the bulbs in the Fall like Gladiolus.

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### BABIANA.

**A** GENUS of Cape plants, with solid bulbs or corms, which are eaten by the Hottentots, and which, when roasted, are said to resemble chestnuts. All the species have showy flowers of various colors, blue predominating. Some of the varieties are finely variegated. They succeed in very sandy loam, and may be grown either in pots for ornamenting the greenhouse, or in the open ground, where they may be allowed to remain altogether. They increase rapidly by offsets.

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### CHIONODOXA LUCILLÆ.

**G**LORY of the Snow. This plant is increasing in popularity every season, and the more it is seen the more it is appreciated. It is a perfect gem for Spring decora-

tion, and there is no plant in cultivation producing such a lively and charming effect when planted in a mass. It is thoroughly hardy, readily increased, and can now be procured at a very low price, which ought to induce everyone who has a garden, no matter how small, to have a good supply of this charming plant. When strong, it produces twelve to sixteen lovely sky-blue flowers on a stem. For pots it is very useful, and can be used with charming effect for edging, massing borders, and rock-work.

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### THE SNOWDROP.

**F**OR its poetical associations as the ever welcome harbinger of Spring, the Snowdrop is very generally cultivated and is entirely hardy. It is a native of Great Britain, where it is a great favorite. There is no special care needed in their culture; they generally do well under most circumstances, and should be planted in the Fall. There are a single and double variety, both of which are desirable. A rockery or bank with a lot of Snowdrops coming through in the early Spring is always a cheerful sight.

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### IXIA.

**A** GENUS of beautiful Cape bulbs, with narrow leaves, and slender, simple, or slightly branched stems, bearing spikes of large showy flowers, various in color, and exceedingly attractive when fully expanded by sunshine. *Viridiflora*, which has large sea-green flowers with black markings at the base of the segments, is a very singular looking, as well as very beautiful plant. There are many species and some varieties, and the

greater part of them are worthy of cultivation. They are half hardy, but with us should be grown in pots in the greenhouse. About mid-Winter they will begin to show their handsome flowers freely. When done flowering they should be dried off till September or October, which is the proper time to start them again. They grow well in a light loam with the addition of leaf mould and sand. They are propagated by offsets.



## CHAPTER XIX.

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### Novelties and Humbugs in Floriculture.

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**M**R. P. T. BARNUM, of circus fame, "the greatest on earth," once made the assertion that the American people liked to be humbugged. Disagreeable as this dose may be to swallow, it is not devoid of truth. In Mr. Barnum's veteran experience as a showman he found annually a desire for novelty among the millions he amused that it was difficult to supply. So eager were the masses for some sterling novelty, and so great the craze for curiosities, that, in their enthusiasm, they would accept all kinds of shams and delusions with apparent relish. Although the field of Mr. Barnum is widely separated from Floriculture, the florist, the seedsman, and the nurseryman in the United States at the present day find a similar desire among their patrons each year for something new and before unheard of with merits unequalled and of inestimable value. If such a thing is offered with a great flourish of trumpets it is readily gobbled up at a good price. Some will buy it because they have faith it is all that it is represented to be, and get it for its real value; others will buy in hopes to have something finer than their neighbor, while others will buy it who have no faith in it, but just because it is popular will get a few so that they can say to their friends they "have a half dozen of them down at the house," and give their opinion upon it. We can only

say in regard to novelties, that they must be handled with care, as if you invest heavily the chances are that you will come out the loser. We cannot tell you not to touch them at all, for we must remember many of the fine flowers that we enjoy at the present day came to us at one time or other in the form of novelties, and to eliminate novelties entirely from our purchases would be depriving ourselves of the chance of securing some of these good things. But when we remember that more than ninety per cent. of novelties sent out in the last fifteen years have failed to come up to the high standard claimed for them, we can best judge of the sum that we would deem prudent to invest in them. It is best to let your home florist test all novelties and see if they are worthy the praise bestowed upon them. If he is the right kind of man he will test those things before offering them to his customers, and by encouraging him he will bring to your door all the latest acquisitions worthy of cultivating as soon as fully tested, and save you the mortification of spending time and money in trying to get a plant totally unfit for your climate and soil.

There is a desire on the part of the florist, the seedsman, and the nurseryman, to give their customers the best their is in flowers, seeds and trees; to improve where possible existing varieties, and get all their respective goods to the highest possible standard of excellence. How far they have succeeded in all this is fairly attested in the improvement of many of the plants and varieties of seeds and trees of the present day over the sorts distributed twenty years ago. There is also a desire on the part of the consumer to secure the best in the market. This desire to get something rare on the part of the consumer, and the great desire to offer something unequalled on the part of the seller, is the germ from which springs the



perennial tree of novelties. Owing then to this demand new things are yearly offered in both vegetables, fruits and flowers. Some has merit and some has none; the purchaser pays his money and takes—what's given him; perhaps he gets his money's worth, and perhaps he don't. One half the trade sells them because they make money by it, and the other half sells them so as not to be hindermost in the progress of the day, and not offer the newest things catalogued by other houses, and because everybody wants them they all sell them, and if people get "bit" a little sometimes they cannot hold themselves entirely blameless. It is always best to be moderate in our expectations and buy what we know from experience is good for our main crop, and a little of those we don't know to test, if we feel experimentally inclined, and get them from a source that we know is reliable. This lifetime is too short to have to wait many moons to find out what a certain seed will yield, or cultivate a tree for a couple of seasons to find out what sort of fruit it will bring forth. For this reason then when people plant they should be careful what they plant, for grapes will not grow on thorns or figs on thistles. If you want Le Conte Pears you must plant them, and you must get them from a reliable, well established house or firm that you know where you can find them and go back on them for damages if all does not turn out satisfactory. If on the other hand you buy from the glib-tongued itinerant pedlar, you must bear your disappointment in silence, for you can never find him any more. The country is too large and there are too many other people in other places who want to buy trees to make it necessary for him to pay you an annual visit. He represents no responsible house; he simply takes orders and gets them filled the cheapest he can; the nurseryman in order to give

him an unusually low price will be in most cases compelled to substitute a good many articles; this of course is no objection to the pedlar, if the price can be made sufficiently low; he will then in turn substitute so as to suit his respective orders, and by the time they get to the customer heaven only knows what they have got. He will sell you a dozen kinds of Apples out of one lot or variety. He will sell you a Concord Grape for a Pocklington, and charge you seventy-five cents, when it is only worth ten cents. He will sell you Amsden Peaches for fifty cents, when the nursery he claims to represent will sell them for ten cents. He will sell you a Rose for a dollar that you could buy from a florist for twenty-five cents, and when you plant it it turns out to be a Dog Rose. He will sell you Strawberry plants at one dollar a dozen that the nursery sells at a dollar a hundred, or a Clematis for a dollar and a half that you could buy the world over for fifty cents. He has a beautiful plate book, is a good talker, and generally succeeds in getting the ladies of the house interested with his book and the numerous fairy tales he will relate about the vigorous growth of his vines, the vivid coloring and exquisite perfume of his Roses, and the mellow Pears his trees will produce, will interest and captivate them all. In the form of the tree pedlar we have still preserved on earth a remnant of the evil spirit that first bequiled Mother Eve, and lured her into the unhappy transaction of meddling with fruit. In the early Spring these pedlars flock into the large nurseries of the country and buy all the cheapest stock to be found to fill their orders. He may have sold one thousand Pear trees in small lots of a dozen each to a customer, four to be Bartlets, four Le Contes and four Kieffers, and to another he may have sold a dozen two of a kind, that will ripen in succession and

give him ripe Pears all the Summer long. In buying his stock all these matters are forgotten; he simply buys the cheapest trees he can get and labels them to suit his orders. He will do the same with Peaches, Apples and other similar fruit. To one party he will sell a Clematis, to another an Akebia, a Wisteria to another, an Ampelopsis to another, and so on through the whole list of climbers. All these he will put on his order as vines, and get lowest price for so many vines to sell them cheap; the nurseryman offers him what he has most of, and no regard paid as to what nature of vines they are, if they are vines at all it is near enough. One may have particularly ordered a red Clematis, and another a white and so on, and should they be lucky enough to get a Clematis of any description they may consider themselves fortunate. We once heard of a pedlar who had taken an order for several hundred Peach trees for a farmer in one of the Western States, and came to a prominent Ohio nursery to buy his trees for the farmer. At that particular time the nursery had no poor stock in Peach trees on hand that they could sell low enough to give the pedlar a sufficient margin for profit, and the pedlar is never known to buy good stock, as it costs more and in consequence he cannot make as much on it. The nursery in question had at this particular time a large surplus of Althea plants on hand that had grown too large for their trade, and were willing to dispose of them for a mere trifle. The temptation was too great for the enterprising dealer, a bargain was struck, and the Altheas were shipped to the farmer for Peach trees. The appearance of the trees have some resemblance to a Peach tree, though anybody familiar with fruit trees can readily detect the difference. The farmer, however, did not have a sufficient knowledge to make the discovery, and the trees

were all duly planted, and when Summer came his "orchard" was a sight that delighted him. His trees did not bear the first year, as he was previously told they would not; but how they bloomed! and what monstrous blossoms! was what cheered the farmer's heart, and he felt convinced if the fruit of the next Summer was in any proportion to the size of the blooms of the present year, his fortune was complete, and fair Pomona had benignly smiled upon him. The swindle was of course afterwards discovered, and the farmer had no recourse to compensation of any kind. The pedlar certainly could not be found, and the nursery was absolutely blameless, as they sold the dealer the trees as Altheas, not knowing or caring what disposition he was going to make of them. The moral is, don't buy from an irresponsible pedlar, for after he gets his money you can never find him any more, and if bought from a responsible nursery you always know where to find them, and can easily have any mistakes properly and suitably adjusted to your satisfaction.

There is on the other hand a bona fide agent who occasionally travels in the interest of some reputable nursery; he will sell you his goods at the regular catalogue price of his nursery without any exaggeration in the way of colored plates and all his goods will bear his nursery's seal of correctness and accompanied with the usual guarantee of his house for their genuine quality. He will prove to you by the proper credentials that he represents a thoroughly responsible establishment, and if you are convinced you have a reliable agent and not a fraudulent pedlar, a transaction with him will be as entirely safe as if you bought from the proprietor of his establishment on his nursery's grounds. The trouble is to detect between the spurious pedlars and the honorable

agents, and when parties cannot tell the ring of the genuine metal when it approaches him in the form of a tree vendor they had better send their orders direct to some responsible house doing business in that line, and they may be assured full justice will be meted out to them and satisfaction assured. It is only by such acts as this that reputable houses can exist and can control the large business that they do without the aid of pedlars, plate books, or preserved specimens of fruit, all of which are misleading to the uninitiated. So far as the florist business is concerned there is no first-class florist that sends out a drummer in this country. They all spend on their catalogues the money spent on drummers in all the other commercial pursuits. The intelligent business men in all the cities of the South, both the prosperous merchants, the shrewd lawyers, the calculating insurance man, the far seeing preacher and investigating doctors are all elert, and it takes a clever man indeed to catch them on any wiles of city life. They are familiar with the approach of the bunco steerer and the interesting story of the confidence men. They have listened to the concert of the patent medicene men on the public squares of their city, but they never buy. They know all about the auctioneer on their market squares that shouts himself hoarse offering gold watches for \$5.00 a piece, they will let him carefully alone, although they are aware that they could not get a gold watch any cheaper. The tears of a benighted orphan in search of a parent, and the grief of a heavily veiled woman on the street availeth them nothing, they are long familiar with all these and a thousand other tricks that is practiced in large cities. From their knowlege of all these things their repetition does not arouse their cupidity or elicit over a smile of derision. But when



the springtime comes and their garden instincts begin to bud; the preacher, the merchant, the lawyer, the doctor and the insurance man, all fall the easiest of victims into the net of the first horticultural swindler that comes along; the veriest rustic of the country, is less apt to be caught. It is wonderful the amount of credulity displayed by intelligent people on many matters pertaining to horticulture as told by vendors of some things in that line; that they would laugh at if related in connection with any other matter. They will buy Chinese Lily bulb that will grow to be a beautiful vine, and produce blooms of the most delicious fragrance in ten days, if placed only in a jar of water. A vendor of these bulbs has done a good business in this community recently, as the number of glass jars to be seen in windows attest containing these precious bulbs. The only fault with the vendor of this wonderful bulb is that he sold them too cheap; only asking a nickle a piece when he could have easily got twice the amount. They will buy a Clematis that will grow all over his house the first summer and have countless beautiful blossoms upon it. When any one familiar with these plans know they don't grow with the rapidity of the Cobeia of the Evening Glory, nor no they flaver abundantly the first season after planting. They are plants that take time to produce their great beauty. The city experience with impostures in other lines helps nothing to the industrious merchant when he is to be met at his Suburban home by a faker with some extraordinary plant or bulb to offer. Their knowledge on these things are limited and thus they buy to ornament their homes with the freaks of the floral tribe when the purchase of a really desirable plant would not be thought of.

There is much humbugging in the way of secrets in

horticulture by parties professing to have a plan for doing various operations with the most unqualified success and will sell the receipts for a consideration. In the old country many years ago it was customary to keep the doors of the propagating houses in all the large nurseries locked at all times, and fortunate indeed was the employe, who, by favor might gain admittance to this secret chamber, as it may well be called, and see the different plants in their various stages of propagation and the numerous methods adopted for rooting different classes of plants. The propagator was looked upon as an autocrat and would associate but little with any of the other employes on the place. They have, however, got over all this many years since. Perhaps the greatest reason for this apparently narrow minded system is that all apprentices to the business could only start on payment of a good bonus to the proprietors, and in justice to the young beginners it was deemed fair not to let the regular employes into all the systems of the business that their apprentices had to pay a bonus for the privelege of seeing. This, however, was carried too far in most places as we must not hide our light under a bushel. Yet we find cases where some of this old country fogysm has been brought across the Atlantic. Not more than a dozen years ago, before this place changed hands to its present owner, the late proprietor, who was considered a good vegetable gardener, always gave strict injunctions to all his hands as soon as any visitor of any kind appeared on the place to quit work, and not to resume operations until they had again departed, so fearful was he that others might learn from his work the secret of his success in raising both the succulent Cabbage, and the classic Yam. There are no secrets in horticulture. The laws that govern the germination of a

seed, the rooting of a cutting, or the taking of a bud or graft, are the same now as they were a thousand years ago, and any one claiming to have secret knowledge in the matter are either an ignoramus or an impostor. It is only experience in the gardeners' or florists' business that begets success. Watchfulness is the secret, and the adapting of different things to different conditions that his experience has taught him is best, is the key to the secret, and this may be obtained by all who wish to devote their attention to it. The laws of nature are plainly written and he who runs may read. A jeweler or a shoemaker cannot come into a florist's propagating house or any other department of his business and perform any of the various work to be done with the same quickness or success as the florist himself, no more than the florist can go into the jeweler's or shoemaker's and repair a watch or make a pair of shoes. The experience of the jeweler and the shoemaker makes them perform all their operations with comparative success, and it is his same experience that enables the florist to do likewise in his business, and not the aid of the rabbit's foot or a magic wand as many would suppose. In nearly all matters of life, before accepting some one's say so, it is wisdom first to use our own judgment and common sense; and this is particularly true in many of the operations of horticulture, for in no profession is there greater need for the reasoning faculties, and in the neglect of the use of these, the most absurd errors and delusions are held even by many who are practically engaged in the business. The breeder of fancy fowls or pigeons could not be told that the plumage of either would ever assume the scarlet of the Flamingo, though he would likely be quite ready to believe that his next-door neighbor, who is a flower fancier, may yet have a

blue Rose or a blue Dahlia, phenomena just as unlikely as that his Dorkings or his Brahmas would have a plumage of scarlet; for, so far, we find that there is no such thing in nature as plants having scarlet, yellow and blue flowers, in varieties of the same species. Perhaps the nearest approach to it is in the Hyacinth, but in it, although we have yellow and blue, we have no true scarlet.

The tricks of horticulture are not entirely confined to Uncle Sam's dominions, although we give him due credit for the largest portion. We occasionally hear of some from across the water. Several years ago when the writer lived in a thriving town in the Nutmeg State, having sole charge of a well equipped greenhouse establishment, the employers, whose commercial pursuits generally kept one of them at all times on the move in foreign lands, would always on their return relate of some fine gardens or rare flowers it was their good fortune to see, and above all, were particularly struck with the size and fragrance of the Carnation Pinks found growing in various portions of Spain and sold on the streets very cheaply in all Spanish cities. The younger member of the firm resolved that the next time he went to Spain he would not leave without either some plants or seed of the wonderful Pinks. In the course of a few months he again set sail for an extended European trip, and one day as he was walking the streets of Seville in the land of pinks, as he called it, he saw an old lady on a street corner selling those oft-told-of pinks. He inquired about the plants or the seed, and was glad to find the old lady had the seed for sale as well as the alluring blooms. A bargain was at once struck, and a liberal portion of the seed were soon on their way that were to ere long beautify this particular Connecticut

home and shed their fragrance through every mill and workshop in the entire Naugatuck valley. The writer was given the seeds, and told to be as careful as possible and raise as many as he could. The greenhouse was crowded at this particular time, and a new shelf had to be put up to accommodate a dozen seed boxes, all containing the seed of the fragrant Spanish Pinks. The seed looked larger than ordinary Carnation, and was somewhat doubtful about it, but the great size of the Pinks and their vast superiority to anything in this country, as I was informed, soon dispelled any doubts regarding the seed. I knew that "great trees from little acorns grew," but in this case thought great Pinks could only be produced from large and finely developed seed. So all were duly planted and had the best attention it was possible to give them. The entire family and their numerous friends all had heard of the seed, and lived in pleasant anticipation of an unrivalled display when they all bloomed, and for a period of a couple of weeks would hear the enquiry from all sides of, "James how are the Spanish Pinks?" Of course I always gave a happy answer, as the bright visions of fragrant Pinks they all saw in the near future was too great for me to by any word or thought dispel. At last the Pinks (?) began to come up, and they all came up so nice and evenly that they said it was good seed and James was so successful with everything he did. The strangest part of it to me was that it was that seed I was so doubtful of that first came through the soil, and borne upon a nice little round stem about as thick as a knitting needle, that came about two inches above the soil; rather a strange way for Pinks to start, but then they were such a race of Pinks, and their habits so unknown to me, that all due allowance was made for any little irregularities the seedlings might



show from the development of the ordinary Pinks. Always suspicious, one morning early I lifted down a box from the shelf and set it on the floor to have a thorough investigation. I had thought from the outset of their similarity to the little seed onions that I frequently had to weed when a boy, but of course it was folly to think Pink seed would produce onions. I, however, pulled up a dozen and rubbed them between my fingers, and sure enough got the familiar smell of the onion. I pulled a few more and washed them and then took a bite of a few of the ends, and lo! the unmistakable taste of an onion. Onions sure enough, and Spanish ones at that. I kept the secret to myself for several days, not liking to dispel all the anticipations of Pinks as soon as the Summer days came on that a score of longing hearts were gladly expecting to see, and in reply to many enquiries as regards the peculiar shape of the little plants, would tell them that they would assume their normal condition as soon as they were old enough to make their second leaf. But that leaf that so long was looked for never came, and one morning I told the "boss" that his Pinks were onions. He would not admit it at first, until to convince him, as I did myself, I invited him to smell and then to taste. Still his confidence in the old lady who sold the seeds was not entirely unshaken, as he told me to grow them on anyhow, and if they were not Pinks they might prove to be some desirable kind of an onion we did not have in this country. It was whispered around among the family and friends that the seeds were a failure, and we never after heard of the Spanish Pinks. It is needless to say the onions were not of any merit. Flower loving amateurs who grow plants in their living rooms are often trammled by another dogma, this time bearing the authority of quasi-science, for a great man,

the family doctor, armed with a smattering of chemical lore, glibly asserts that plants at night give out carbonic acid gas, which is poisonous to animal life, and consequently if plants are kept in sleeping rooms sickness and even death may ensue. Nothing can be more destitute of truth. That plants give out carbonic acid gas at night may be true, but that they give it out in quantities enough to endanger human life is utter nonsense. If it were so we would be free from the attacks of the thousands of insects that infest our plants, for their low organisation would cause them to fall the first victims to a gas as poisonous as carbonic acid. Besides most gardeners know that on cold nights when in charge of the fires, the greenhouse is a comfortable place to sleep, and it would be difficult to find as a class a more healthy lot of people than gardeners or florists. The writer has been raised in greenhouses since his early boyhood, and has not only worked and eat in them in the day time, but also slept in them at night, and sickness or ill health is something upknown to him. This is something of a nut for the wisacre of the village doctor to crack. Much more could be written upon all the wiles and tricks of dishonest horticulturists, and the popular errors regarding many things that bear directly upon both Floriculture and Horticulture, We think enough has been said to put the thoughtful on their guard, and if by the perusal of this chapter we may save a portion of our readers from the sharks of the profession, and cause them to use the same good judgment in the purchase of their plants or flowers as they do in all others matters they so ably manage, our object will be fully achieved.

## CHAPTER XX.

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### Greenhouse Requisites and Appliances.

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FREQUENT allusions are made to the South as "Nature's Greenhouses," and in many instances is a very appropriate allusion, considering the many beautiful plants that grow spontaneous in the open air that in other climates would need a greenhouse protection. We have such an early Spring, and the absence of frost until late in the Fall, gives us a prolonged season to enjoy our plants and flowers. The fact that we have a long season, and a short if any Winter, is no reason why we can entirely dispense with greenhouses. We cannot have handsome lawns or door yards in Summer if we have not a proper place to store and propagate our plants during the Winter months. In many cases a pit will answer the purpose very well where only a limited number of plants are grown, and nothing more choice than a line of ordinary bedding plants kept in stock.

#### HOW TO MAKE A PIT.

A "pit" can be made very cheaply where it is necessary to do so; also can be put up at considerable expense if something permanent is desired. A pit may be as large or as small as the circumstances demands it. It should be dug about four or five feet deep, in a position well protected from the North, and presenting a full open front to the South, with the ends pointing directly East and West. If a permanent and completely secure pit is desired, it must be lined on the inside with a wall of brick, and built to about two feet above the surface on the front or South side, and from twelve to eighteen inches higher on the back or North side, with the end

walls sloping from the back to the front. The soil taken from the excavation can be banked up on the outside to near the top of the wall all round the pit, and then by sodding with nice green sod all the soil banked up against the exterior of the pit, it will present a nice appearance. A heavy frame or plate of cypress should be placed on top the wall all the way round. A few rafters will be necessary, and then the sash may be fitted on so as they can slide up and down for the purpose of ventilation. The interior of the pit must be arranged according to the purpose it is intended for. If for potted plants, some shelves made on the same plan as a flight of stairs is a good way, the lowest at the front and running taller towards the back, with a walk or narrow passage in front to allow space to go in and attend to the plants. If the pit is large enough, a door may be put in the end to afford entrance. If not sufficiently large for this, a short step ladder will be necessary to descend. When a pit is desired to be constructed more cheaply, some two inch plank may be used in lieu of brick, nailed to posts securely fastened in the ground, and the soil banked in the usual way as described for brick. If good cypress lumber is used it will last for years, and in the construction of pits or greenhouses we recommend it above any other material we know of.

### GREENHOUSE CONSTRUCTION.

It is true in a pit many valuable plants can be kept with safety through the Winter, but where a bouquet is desired to grace the Christmas table or adorn the reception toilet of a New Year's day, a greenhouse must be at hand, and all who have pretty gardens in Summer ought to have a greenhouse in Winter, for "who loves a garden loves a greenhouse too." A neat greenhouse is not much expense, and is a great ornament to a place. It will afford much pleasure as well as save many florists' bills, and all who admire flowers and have the means should have a greenhouse. In a little volume like this we cannot go into the construction of greenhouses, as to do it ample justice a whole book might be written upon the subject. We will only say that for this purpose no wood we know of is better than cypress. It is without a rival.

It does not warp or twist. It holds paint, is easy to nail and work to shape, and stands the decaying influences of heat and moisture, so destructible to greenhouses, longer than any known wood. It is true this wood grows all through the Southern States, and many of our readers have seen groups of it called "Brakes" in the swamps of the South, but it remained for a firm of lumber dealers in Ohio to take this valuable wood in hand and make a specialty of it for greenhouse construction. These gentlemen prepare the wood for sash bars, guttering and ridges, and no point in greenhouse construction and its durability is overlooked by them. To all contemplating the erection of a greenhouse, we recommend to them the LOCKLAND LUMBER COMPANY, Lockland, Ohio, who will cheerfully give all the information desired upon the subject. By stating the size you intend your house to be, they will quote you prices delivered in your town. The wood will be all gotten out to suit the size of your house, and when you get it any ordinary carpenter can put it up. This plan will be found much cheaper and far more desirable than if you were to employ a regular carpenter to put it up who probably never built a greenhouse in his life, and must of necessity learn his experience at your expense. It is better to get a firm to furnish your lumber that makes a specialty of this particular branch, than to trust it to the inexperienced in this line. A man may be able to construct a beautiful and commodious dwelling house, and yet make a very poor greenhouse. We have been using cypress in our greenhouses here for some years from the Lockland Company, and are much pleased with it, and desire here to give the benefit of our experience to our readers.

#### HEATING AND VENTILATING.

This is also a subject that much could be written upon, but that is not our purpose here. To be as brief as possible the best instructions we can give is, as soon as the dimensions of your greenhouses are determined upon write to HITCHINGS & Co., 233 Mercer street, New York. Give dimensions of house, the temperature you desire to keep it at, and also the average temperature of your



Winter. Send them also a rough sketch of ground plan of house, and they will tell you exactly what size boiler you need and the amount of pipes it will take to produce the desired temperature. They will ship you the boiler and pipes with plans and instructions, so that the ordinary village plumber can put them together in good working order. We have been using one of their boilers and pipes here for many years, and it gives complete satisfaction. The ventilation of a greenhouse is also an important matter, and without the proper appliances is a very troublesome job. Messrs. Hitchings & Co. have also a patent ventilating apparatus that should be in every greenhouse, and will also figure on it for any one by giving the style of the house and the number of sash to be raised. A whole house is ventilated by the simple turning of a wheel or handle. It saves much time and labor and is a most desirable apparatus. We use it here and can ventilate all our houses in less than five minutes that previously took half an hour to do. The sash can be opened just as much or as little as desired, and when closed or open they cannot be moved or shaken by the wind. A greenhouse without a ventilating apparatus of this kind would be very incomplete. After your greenhouse is complete, your pipes and boiler working all right, and your ventilating machinery in good order, before you can begin the operations of general greenhouse work, there is one more important item I wish to speak of, and that is

#### FLOWER POTS.

A good supply of pots of different sizes must always be kept on hand where a greenhouse is kept up and plants grown in any quantity. Small pots, two and one-half inches in diameter, are small enough for any purpose, and are most suitable for potting up seedlings or young cuttings from the seed bed. Hundreds of thousands of this same two and a half inch pot are in use by the florists all through the country, as two-thirds of the plants they cultivate are grown in this size pot. The range of sizes from two and one-half inches up to twelve in diameter are the dimensions most generally made; where pots larger than twelve inches in diameter are needed for large specimen plants, tubs or boxes are preferable, as

large heavy pots are apt to be broken in handling them and their cost is considerable compared with the prices of the smaller sizes. Unless in the case of large specimens, such as Palms, Century Plants, Oleanders, etc., the sizes from two and a half to twelve inches in diameter are large enough for all practical purposes. There are many manufacturers of pottery in the South, but none that we know of that make flower pots a specialty, especially the smaller sizes, which are so important and so generally used, and not having the machinery suitable for the manufacture of the smaller sizes cannot compete with the prices of the large flower pot manufacturers of the Middle States. All the pots used on this place come from the pottery of MAPPS BROTHERS, Winton Place, Ohio. They make good pots and are clever and honorable gentlemen to deal with. Their prices are the lowest we know of, and the freight rate from Cincinnati by rail or river to all points in the South are most reasonable. To all parties desiring to make a purchase of pots we cheerfully recommend them, and know any business entrusted to them will be most satisfactory. We make this statement because we have daily in the Spring and Fall inquiries about pots, and receive small orders for them to be sent by express. This is unsatisfactory to us, as well as to our customers, as paying express charges on flower pots is an expensive game that the parties seldom discover until the express man delivers them at their door. The charges are always more than twice the value of the pots, which makes the customer dissatisfied, and consequently not satisfactory to us. If all the ladies would club together in a community and order all the pots they wanted shipped by freight in one shipment, the cost would be light and satisfaction would be assured. These statements are made for the benefit of the readers of this little volume, as by corresponding with any of the parties mentioned here more information can be had upon their respective line of appliances and requisites than could be written in a hundred pages of this book.















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